AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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THE COMBAT.—*Drawn and Engraved for the American Agriculturist.*

No animal presents greater contrasts than does the male deer at different seasons. In winter, after his horns have fallen, and in spring, while waiting for them to grow again, the buck presents a very different appearance from the same animal in autumn, when, with wide-spread antlers, and courageous bearing, he is ready to do battle with his rival. At this season the bucks roam the forest in search of the does, and when two meet, a battle is likely to ensue. In these contests the horns of the bucks become sometimes so interlocked, that it is impossible for the animals to disengage, and death by starvation must follow. In the wilds of Texas, we have frequently met with pairs of skulls with the horns thus entangled. When we consider that the horns will be shed naturally in a few months, the strength with which they hold to the skull is astonishing. Even the horns of three animals have been found fastened together, with the skulls attached.

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Milking Machines.—"J. E. S.," Richmond Co., N. C. There are various machines invented for drawing milk from the cow, but none are in use practically that we know or have heard of. There are two principles involved in these machines, one to open the duct by inserting a tube and allowing the milk to flow out by its own weight, and the other to draw the milk from the teat by a pump, or by creating a vacuum into which the milk flows. We see so many practical objections to the use of these machines, that we can hardly advise any one to waste time in trying them.

Calendar for July.

Day of Month.	Day of Week.	Boston, N. England, N. York State, Michigan, Wisconsin, Iowa, and Oregon. Sun rises.	Sun sets.	Mo'n rises.	N. Y. City, Ct., Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois. Sun rises.	Sun sets.	Mo'n rises.	Washington, Maryland, Virginia, Kentucky, Missouri, and California. Sun rises.	Sun sets.	Mo'n rises.
		H. M	H. M	H. M.	H. M	H. M	H. M.	H. M	H. M	H. M.
1	W	4 25	7 40	9 43	4 31	7 31	9 37	4 37	7 29	9 31
2	T	4 26	7 40	10 14	4 32	7 34	10 10	4 37	7 29	10 5
3	F	4 27	7 40	10 43	4 33	7 34	10 39	4 38	7 29	10 36
4	S	4 27	7 39	11 6	4 33	7 33	11 5	4 38	7 28	11 3
5	S	4 28	7 39	11 29	4 34	7 33	11 29	4 39	7 28	11 30
6	M	4 29	7 39	11 53	4 35	7 33	11 54	4 40	7 28	11 56
7	T	4 29	7 39	morn	4 35	7 33	morn	4 40	7 28	morn
8	W	4 30	7 38	0 18	4 36	7 32	0 31	4 41	7 27	0 34
9	T	4 31	7 38	0 48	4 37	7 32	0 52	4 42	7 27	0 57
10	F	4 32	7 38	1 24	4 37	7 32	1 30	4 42	7 27	1 36
11	S	4 33	7 37	2 8	4 38	7 31	2 14	4 43	7 26	2 21
12	S	4 33	7 37	3 1	4 39	7 31	3 8	4 44	7 26	3 16
13	M	4 34	7 36	sets	4 40	7 30	sets	4 45	7 25	sets
14	T	4 35	7 36	8 50	4 40	7 30	8 45	4 45	7 25	8 39
15	W	4 36	7 35	9 22	4 41	7 29	9 18	4 46	7 24	9 14
16	T	4 37	7 34	9 47	4 42	7 29	9 44	4 47	7 24	9 41
17	F	4 37	7 34	10 10	4 43	7 28	10 8	4 48	7 23	10 6
18	S	4 38	7 33	10 33	4 44	7 28	10 29	4 49	7 23	10 29
19	S	4 39	7 32	10 48	4 45	7 27	10 48	4 50	7 22	10 49
20	M	4 40	7 32	11 6	4 45	7 26	11 8	4 50	7 21	11 10
21	T	4 41	7 31	11 27	4 46	7 26	11 30	4 51	7 21	11 32
22	W	4 42	7 30	11 50	4 47	7 25	11 54	4 52	7 20	11 58
23	T	4 43	7 29	morn	4 48	7 24	morn	4 53	7 19	morn
24	F	4 44	7 28	0 18	4 49	7 23	0 24	4 53	7 18	0 29
25	S	4 45	7 27	0 53	4 50	7 22	0 59	4 54	7 17	1 6
26	S	4 46	7 26	1 36	4 51	7 21	1 43	4 55	7 17	1 50
27	M	4 47	7 25	2 32	4 52	7 20	2 39	4 56	7 16	2 46
28	T	4 48	7 24	rises	4 52	7 19	rises	4 56	7 15	rises
29	W	4 49	7 23	8 14	4 53	7 18	8 10	4 57	7 14	8 5
30	T	4 50	7 22	8 44	4 54	7 18	8 40	4 58	7 14	8 37
31	F	4 51	7 21	9 10	4 55	7 17	9 8	4 59	7 13	9 6

PHASES OF THE MOON.

MOON.	D.	BOSTON. H. M.	N. YORK. H. M.	WASH'N. H. M.	CHA'STON H. M.	CHICAGO. H. M.
3d Quart.	6	1 18 ev.	1 6 ev.	0 54 ev.	0 42 ev.	0 12 ev.
New M'n	13	11 44 m.	11 32 m.	11 20 m.	11 8 m.	10 38 m.
1st Quart	21	8 47 m.	8 35 m.	8 23 m.	8 11 m.	7 41 m.
Full M'n	28	11 59 ev.	11 47 ev.	11 35 ev.	11 23 ev.	10 53 ev.

AMERICAN AGRICULTURIST.

NEW YORK, JULY, 1874.

July is a hot and busy month. We are in the midst of haying and harvesting, with corn, potatoes, beans, and roots to cultivate, hoe, and keep free from weeds. We have to think also of the next wheat crop, and not neglect our summer fallows. Then there are the cows, the sheep, the horses, the swine, and the poultry to be looked after. There is, perhaps, fruit to be picked and marketed. Altogether, the farmer has his hands full. He needs an active brain in an active body. If he has good health, the work should not discourage him. He will pull through. He should not get excited; he should not worry. He should keep cool; and the best way to do this, in more senses than one, is to keep steadily at work. Work will clear the mind and cool the body. But it should be energetic, spirited work, not slow, plodding drudgery. Every stroke should be directed by the mind and be given with a will. It is such work that tells. Few of us realize how much the character of farm work has changed. It is better to run a mowing machine than to swing a scythe all day, but there are men who are not happy unless they are engaged in some hard, steady work. They have not patience enough to manage a machine. They are mental sluggards. They want a machine to put itself together, to tighten its own bolts, to be self-sharpening and self-oiling. Such men are born hewers of wood and drawers of water. They will not make successful modern farmers. The farmer who has his mower, tedder, unloading-fork, self-raking, and self-binding reaper; who cuts feed, turns the grindstone, and pumps water by wind or horse power; who plants his corn with a drill, hoes it with a harrow, cultivates within an inch of the rows, cuts up the crop, and husks it with a machine, is a very different man from Hodge, the farmer, as he exists in the mind of the novelist or poet. We believe in farmers and in farming. There is not as much isolation on a good farm as in a large city. There is no lack of excitement or of mental stimulus. We have not time to be dull. The seasons are too short and the work too pressing. We are in a hurry to harvest our crop, that we may sow the next. We live in the future; and if we aim to improve our farms and our stock, we can yearly see sufficient evidences of real progress to feed our hopes and encourage us to continue our labors. Farming is slow work, but we are building on a solid foundation, and are reasonably certain of our reward. Let us brace our minds with hope, and continue the good work. The prospects for good farmers in this country were never more encouraging than at the present time.

Hints about Work.

The Most Important Work on a farm is not plowing and sowing, haying or harvesting. These are big jobs that force themselves on our attention. They are rarely neglected.

Little Things, which we are apt to overlook and neglect, are the most important. We need to look more to the little rivets that fasten the sections on the cutter-bar of a reaper than to the main driving-wheel. Dipping lambs to kill ticks is more important than shearing the sheep, because more likely to be postponed and forgotten.

Farmers often Work too Hard.—Some of the most successful farmers we have ever known were men who kept others at work, but did little so-called work themselves. They knew how everything should be done, and saw that it was done promptly and well. They lent a hand when it was necessary, but took hold of no steady work that an ordinary laborer could perform.

Your own Health and that of your Family should be the first consideration. See that the cellar is clean, and the sink and out-houses are not giving off poisonous gases.

Dry Earth is a cheap disinfectant. Use it freely, and be not sparing of water, soap, and lime.

Personal Cleanliness would be less rare among hard-working men and boys if bathing conveniences were more common. A good swim is a good thing, but a man can be clean without having a river to bathe in. A tub of soft water, in the barn, if need be, with soap and sponge and towels, should not be lacking on any farm. We should think little of the man or boy who will not use them.

In Malarious Regions do not get up too early in a morning; and in our changeable climate no house should be without the means of making a fire at a moment's notice. If the evenings are damp or chilly, make a fire, if necessary for comfort, and keep the doors and windows open. Many people seem to think if they make a fire they *must* shut the doors.

Nutritious Food and plenty of it is essential to good health. A man who does not eat can not work. Meat soup is better than beer, and a cup of good coffee is more invigorating than a pitcher of hard cider. For a hard-working man, good bread and firm, fat pork, are better than cakes or cookies.

Work Lively.—It is less fatiguing to milk ten cows in an hour, than in an hour and a half, and you have the half hour to give them a little extra food, which is certainly good for the cows. Horses should rest in the pasture or the stable, and not when in harness. Heavy boots and slow motions belong to a species of farming which is fast becoming extinct. Do not carry one pail of water when you can carry two. Study the economy of labor. Do not waste your time or your energy. Make every stroke count, and let the strokes be given with a will.

Haying should be pushed forward rapidly. In our experience, it is not wise to wait for the weather. While the grass is green, a little rain or dew does not hurt it. We like to cut in the afternoon and evening, and let it lie all night. The next morning, when the dew is off, turn it or ted it with a machine. In the afternoon rake into windrows, and if timothy, draw it in; or if clover, put it in a cock and draw in as soon as ready—say the next afternoon, turning or opening the cocks in the meantime, if necessary. Clover makes capital hay if cut early and well-cured.

Wheat should be cut as soon as there is no milk in the kernels. If the field is square, and there are five men to bind, each man will have a side, and

they can go round and round the field after the reaper. A man will bind one side while the reaper cuts five sides. If the field is large and the crop heavy, a good reaper will give the five men all they want to do. See that the sheaves are of the proper size and well bound, and be careful that they are firmly stuck up in shocks that will shed rain.

If you Thrash as drawn from the field, the grain must be thoroughly dry and hard, and even then there is danger of the wheat heating if placed in a large heap. We nearly always thrash our own wheat as drawn from the field, but we are careful to turn the grain every two or three days, and spread it out as much as possible on the barn-floor.

Rake the stubble between the shocks immediately after the wheat is cut. If this is done in the evening, or in the morning while the dew is on, there will be less grain lost by shelling.

The Rakings, when you thrash from the field, should be loaded the night before and drawn to the machine. A good man, with nothing but sheaves to pitch, will send home the wheat as fast as a ten-horse power machine can thrash it. You require three wagons—one at the machine, one going back and forth, and one in the field.

Six-rowed Barley will be ripe about the same time as wheat, and you can cut it while the wheat is curing in the field; thrash both crops at one operation, and put the straw of both into one stack.

Two-rowed Barley is rarely ripe for some days after the wheat, and many prefer it on this account.

Binding Barley into sheaves like wheat is the better plan, provided the crop is a heavy one.

Oats will not be ready to cut for ten days or two weeks after wheat, giving as a breathing spell. So far as the quality of the grain is concerned, oats are quite frequently injured by cutting too early. But where the straw is used for fodder, what we lose in the grain we gain in the straw.

Oats and Peas grown together, we cut with a Johnston reaper. The machine throws the crop off the platform into moderate sized heaps. These are turned once or twice, and then drawn to the barn and thrashed. If the weather is unsettled and the crop very green, it may be necessary to put it into cocks. If well cured, the straw is very nutritious, and is greedily eaten by sheep and horses.

Peas are sometimes pulled up with a rake. It is a slovenly practice. It injures the fodder and leaves a large percentage of the peas on the ground. True, these can be eaten by pigs and sheep. But at this season we have all the other stubbles for the stock to glean. It is better to "roll" the crop with a scythe, unless it can be cut with a reaper.

Cultivating Corn must, on no account, be neglected. The cultivators, with short whiffletrees attached, should be in the field and ready for use at a moment's notice. Then if a shower stops work in the hay or harvest field, or while the dew is on in the morning, start the cultivators, if it is only for an hour or two. The ground should never be allowed to crust over, and no weeds should be suffered to grow. We plant no pumpkins with our own corn, and cultivate frequently as late as the first week in August. "It is the last blow that kills the cat," and it is the last hoeing and cultivating that kills the weeds and leaves a clean corn stubble.. Cultivate shallow—just deep enough to kill the weeds. If any thistles escape, cut them with a hoe.

Root Crops, such as beets, mangels, and rutabagas, must be kept thoroughly cultivated and hoed. Thin out the plants in the rows to twelve or fifteen inches apart.

Common Turnips, such as the Yellow Aberdeen, may be sown any time this month, and such varieties as the Strap-leaf may be sown as late as the first of August. Superphosphate of lime is the best of all manures for common turnips. It is far better to sow in rows wide enough apart to admit of the horse-hoe—say twenty-eight inches—than to sow broadcast.

Summer-fallows for Wheat must be repeatedly stirred with the harrow and cultivator, and kept mellow and free from weeds.

Barley, Oat, or Pea Stubble, intended for wheat, should be harrowed or cultivated immediately after harvest, to start any seeds lying on or near the surface. Then plow carefully and well. Harrow and roll. Any weeds that start must be killed by the cultivator. Whether it is or is not best to plow again before sowing, depends on the character of the land and on the weather. On light land and in dry weather, we think it is not desirable to plow the second time. We want to retain as much moisture as possible in the soil, and one or two inches of loose, mellow surface soil, makes a capital mulch, and keeps the soil below moist and in good condition to start the wheat when the seed is deposited in it with a drill.

Weeds on Stubbles and in Pastures may be cut with a mowing machine, and if the seeds are ripe enough to grow, rake up the weeds with a wire horse-rake and burn them.

If you are Short of Grass, keep the horses in the stable or yard, and feed cut hay, shorts, and corn-meal. A large horse at hard work requires about sixteen pounds of hay and fifteen pounds of corn-meal per day. A bushel of cut hay weighs about eight pounds, and corn-meal about forty-five pounds per bushel. If you mix half a peck of corn-meal with a bushel of moistened cut hay, and a quart of shorts, you can let the horses have all of this mixture they will eat up clean three times a day. Let them have a little long hay in addition.

If Pasture is Abundant, turn the horses out at night. If they are at hard work, let them have all of the above mixture of hay and meal they will eat. They will probably eat but little, but they should have all they *will* eat. Make short nooning, and quit the earlier at night, so as to give the horses longer time in the pasture.

"*Corn-Meal Soup*" is an established institution on our own farm. We keep a half-barrel constantly full of water, with a little corn-meal soaking in it. The horses are allowed to drink all they wish. We let them drink the first thing in the morning, and again when taken to work. When brought home at noon, they are also allowed to drink before being put in the stalls, and again when taken out, and so at night. By standing a few hours, the chill is taken off the water, and allowing them to drink when brought in from work, does not seem to hurt them. If the meal gets sour, remove it and feed to the pigs.

Milch Cows must have access to pure water. If the pastures are poor, a feed of corn-fodder, cut a few hours before feeding, will be of great value, especially if the cows are fed enough meal to make the corn-fodder as nutritious as the best of grass.

Sheep should have their feet pared; and if there is any reason to apprehend foot-rot, dress their feet with any substance that will kill the virus. We use crude carbolic acid, mixed with an equal quantity of melted tallow, and put it on with a small brush, being careful to cover every part of the hoof, especially between the claws.

Dip the Lambs, to kill ticks, in a solution of carbolic soap or tobacco water. Repeat in two weeks. Towards the end of the month, dip the sheep also.

Swine should have access to water. With this, and a good pasture, breeding stock needs nothing more. Young pigs and store hogs, that are to be fattened this fall, should be fed liberally.

Salt seems necessary to the health of all farm animals. They will not eat too much, if they have access to it at all times. If they are allowed to go without salt for two or three weeks, they will then eat more than is good for them. For swine, we mix about two quarts of coal or wood ashes, one pint of salt, and half a pint of sulphur, and let the pigs eat all they will of it.

Work in the Horticultural Departments.

July should have been called the Month of Weeds. The larger share of the cultivator's energy, in whatever department, is expended in keeping down the plants that are not wanted. Those who claim that weeds are a great blessing, as they induce a frequent stirring of the soil, can now enjoy this blessing in the fullest abundance. Weeds, like fire, are easily controlled, if attacked while small, but when they get fairly established, it is often cheaper to plow up the crop, than to undertake to weed it.

Orchard and Nursery.

Where crops are planted between the trees, the surface should be kept clear of weeds, and the soil mellow and loose.

Pruning may be done this month. Aim to get a broad, open head, so that plenty of light and air can reach the fruit, to perfect it properly.

Budding may be performed as soon as the buds are well matured, and the bark of the stock loose enough to be raised easily.

Young Trees, in nursery rows, must be looked after. Keep clear of weeds. Be careful, in cultivating between the rows, not to injure the trees with the whiffletree. Use a short whiffletree, with the ends well covered with leather or woolen.

Seedlings ought to be shaded, and if very dry, water occasionally. Hand-weed when needed.

Grafts, set in the spring, will require looking after, as it often happens that the stock will throw out vigorous shoots, which will rob the graft of its nourishment. All such should be rubbed off as soon as they appear.

Thinning, if not already attended to, should not be longer delayed. The difference in the size and quality of the fruit, will pay for all the trouble, in the increased price.

Seeds.—Save seeds of forest trees and shrubs, as fast as ripe. Most kinds need to be preserved in sand, to prevent them from becoming too dry.

Fruit Garden.

There will be plenty of work in looking after the harvesting of the fruit, and destroying the weeds, which now grow rapidly.

Strawberries, in most localities, will be through with by this time. The mulch should be taken off, and a dressing of manure applied. If plants are needed for new beds, allow the runners to take root. The plants thus formed, may be set out in the coming fall, or the following spring.

Raspberries follow close upon strawberries, and will require picking daily. After the crop is gathered, cut out the old fruiting canes, and allow only three or four new canes to each stool; these should be tied to stakes, or trellises, so that they will not be broken by high winds.

Blackberries will often need to be tied up, owing to the large quantity of fruit they set. A heavy mulch will enable one to keep down the weeds, as it is often difficult to hoe among them. The young and vigorous canes for next year's fruiting must be tied up.

Grape-Vines.—Tie up the young shoots, and thin out the fruit on young vines. Pinch the laterals to one leaf, and as they again start, repeat the pinching. Keep a sharp look-out for beetles and caterpillars, which should be hand-picked. As soon as mildew appears, apply sulphur with a bellows.

Currants.—If the "worm" eats the leaves, dust with powdered white hellebore. When trained in tree form, the branches are liable to break down, unless supported.

Dwarf Trees need care in thinning the fruit. Preserve the proper shape of the tree, by removing all superfluous and pinching rampant branches.

Kitchen Garden.

Asparagus.—Do not cut too late. As soon as peas come to take its place, stop cutting, and give a good dressing of manure. Allow the tops to grow until fall, then cut and burn, to destroy the seeds, if they are not wanted for sowing.

Beans.—Plant a few rows for late snaps. Pinch Limas when they reach the top of the poles.

Beets.—Early varieties, sown this month, will grow rapidly, and make excellent roots for winter use. Use the thinnings for greens.

Cabbages and Cauliflowers for the late crops may now be transplanted from the seed-bed. Keep well hoed, and occasionally water with liquid manure, if convenient.

Celery.—Set for main crop in rows, three feet apart, and the plants six inches.

Carrots.—Hoe often, until the tops cover the ground so much as to prevent working.

Corn.—Plant the early sorts now, for late use, and for drying, if wanted. Keep the cultivator and hoe in motion among that already planted.

Egg-Plant.—See that these have plenty of manure, both liquid and solid. Do not allow the fruit to remain long in contact with the ground.

Herbs.—Transplant from the seed-bed, and keep well hoed.

Melons.—Pinch back the ends of the vines, so as to throw all the strength into the fruit already formed. Remove such fruit as will not ripen.

Onions will need hoeing frequently to keep down the weeds.

Peas.—It is of little use to plant peas at this season, as they are almost sure to mildew. If it is proposed to risk it, plant at least six inches deep.

Seeds.—As soon as they ripen, gather and store in a dry, airy place, where mice can not get at them. Save seeds of only the earliest and best-formed fruit, roots, etc.

Sweet-Potatoes.—Do not allow the vines to root; move them once a week, and keep free of weeds.

Squashes.—Hand-pick the squash-bug; this is the only effectual remedy. Allow the vines to strike root at the joints.

Tomatoes should be trained upon trellises of some kind, to keep the fruit from contact with the soil. Brush or hay is better than nothing, and should be used if nothing else is at hand.

Weeds are to be fought persistently, and, if possible, keep the horse and cultivator in motion among the larger crops; it will do no harm if done every day.

There will be much clearing up of odd corners, and of ground already cropped to be done, and advantage must be taken of this time of comparative leisure to attend to it.

Flower Garden and Lawn.

Lawns require frequent cutting to keep the grass looking fresh and velvety; this will also kill annual weeds. Perennial weeds must be taken out when young, with a spud.

Climbers.—Keep neatly disposed upon the trellises, and provide supports for all such as need them.

Lilies.—Tie to stakes as soon as they become tall enough to need it.

Gladioluses will need stakes to prevent their flower-stalks being broken. Most seedsmen and florists now keep neatly turned sticks, which answer very well for this.

Annuals.—Quick growing sorts may be sown now for late flowering.

Biennials.—Keep the ground carefully weeded. Sow seeds as fast as they ripen; most kinds will make plants strong enough to winter safely, and bloom next year. Some will remain dormant until spring.

Dahlias require some support for their flower-stalks. Remove all imperfect flower-buds as soon as they appear.

Sub-Tropical Plants, where grouped upon the lawn, need considerable care to keep them in a flourishing condition. Remove defaced leaves, and stake such as require it.

Foliage Plants.—Where beds of Coleus, and other so-called "foliage" plants are used, they should be cut back, so as to form compact, bushy plants.

Greenhouse and Window Plants.

It will be difficult to keep the plants in the greenhouse and windows looking well at this season, unless considerable care is used. Plants should not be subjected to hot, drying winds, as these will soon destroy them. Shading of some kind is needed during the summer months, otherwise the leaves will become scorched. Admit plenty of air through the ventilators every day, and during warm nights they need not be closed.

Commercial Matters—Market Prices.

Gold has been up to 113¾ and down to 110¾—closing June 12th at 111 as against 112¾ on May 12th..... Receipts of Produce have been quite liberal since our last, and prices of Breadstuffs have been generally quoted lower, leading to an active business, in good part for export; the decline in ocean freights helping the ontward movement. Corn has been exceptionally scarce toward the close, and prime samples having been greatly needed for prompt shipment, values have been quoted stronger.....Provisions have been fairly active, but at irregular quotations, closing generally in favor of buyers.....Wool has been in fair demand, and held with more firmness, on very moderate offerings of desirable grade. New Clip, especially California, is in better supply, but held above the views of purchasers, in most instances, checking operations. Manufacturers are the chief buyers.....Tobacco is quiet, at rather easier figures .....Hops, Seeds, and Hay are selling slowly, closing barely steady.....Cotton is in brisk demand, mainly for forward delivery, on speculative account, at variable prices, closing somewhat more firmly.....In most other lines, trade is slow.

CURRENT WHOLESALE PRICES.

	May 12.	June 12.
PRICE OF GOLD	113¾	111
FLOUR—Super to Extra State ₱ bbl	$5 20 @ 7 75	$4 50 @ 7 35
Super to Extra Southern	6 30 @10 50	5 90 @10 50
Extra Western	6 00 @10 50	5 50 @10 25
Extra Genesee	7 75 @ 9 50	7 35 @ 9 00
Superfine Western	5 20 @ 5 90	4 50 @ 5 25
RYE FLOUR	4 75 @ 6 00	4 75 @ 6 00
CORN-MEAL	3 90 @ 4 75	4 00 @ 4 75
WHEAT—All kinds of White	1 65 @ 1 87½	1 60 @ 1 80
All kinds of Red and Amber	1 35 @ 1 70	1 30 @ 1 62½
CORN—Yellow	84 @ 86	85 @ 87
Mixed	81 @ 85¼	82 @ 85
White	83 @ 86	90 @ 1 10
OATS—Western	63 @ 66	62 @ 70
State	63 @ 66	62 @ 70
RYE	1 05 @ 1 12	1 03 @ 1 06
BARLEY	1 30 @ 1 70	Nominal.
HAY—Bale, ₱ 100 lbs	1 00 @ 1 60	1 00 @ 1 60
STRAW, ₱ 100 lbs	50 @ 1 00	50 @ 1 05
COTTON—Middlings, ₱ lb	18¼@ 18¾	18¼@ 18¾
HOPS—Crop of 1873, ₱ lb	10 @ 30	8 @ 35
FEATHERS—Live Geese, ₱ lb	58 @ 65	50 @ 62½
SEED—Clover, ₱ lb	10¼@ 10¾	10 @ 10½
Timothy, ₱ bushel	2 75 @ 3 00	2 90 @ 3 12½
Flax, ₱ bushel	2 50 @ 2 62½	Nominal.
SUGAR—Refi'g & Grocery ₱ lb	6¾@ 9¾	6¾@ 9¼
MOLASSES, Cuba, ₱ gal	30 @ 48	31 @ 48
New Orleans, ₱ gal	70 @ 80	75 @ 85
COFFEE—Rio (Gold)	17 @ 21	17 @ 21½
TOBACCO, Kentucky, &c., ₱ lb	4¼@ 13	4¼@ 13
Seed Leaf, ₱ lb	5 @ 65	4 @ 55
WOOL—Domestic Fleece, ₱ lb	30 @ 60	30 @ 62½
Domestic, pulled, ₱ lb	25 @ 50	25 @ 52½
California, clip	18 @ 36	18 @ 37
TALLOW, ₱ lb	7¾@ 7¾	8 @ 8¼
OIL-CAKE—₱ ton	41 50 @43 00	41 50 @43 00
PORK—Mess, ₱ barrel	17 12½@17 25	17 90 @18 00
Prime, ₱ barrel	14 25 @14 62½	15 00 @15 25
BEEF—Plain mess	9 50 @12 00	9 00 @11 50
LARD, in tres. & barrels, ₱ lb	10¼@ 10¾	11 @ 11¾
BUTTER—State, ₱ lb	26 @ 36	20 @ 32
Western, ₱ lb	20 @ 34	16 @ 27
CHEESE	5 @ 17¾	5 @ 15½
BEANS—₱ bushel	1 50 @ 4 25	1 90 @ 5 00
PEAS—Canada, free, ₱ bu	1 20 @ 1 25	1 20 @ 1 22½
EGGS—Fresh, ₱ dozen	14 @ 18	13½@ 17
POULTRY—Fowls	12 @ 19	13½@ —
Turkeys—₱ lb	13 @ 23	14 @ 22
Geese, ₱ pair	1 00 @ 3 00	1 00 @ 2 50
Ducks, ₱ pair	75 @ 1 25	70 @ 1 25
" ₱ lb	14 @ 23	— @ —
SNIPE, ₱ dozen	1 75 @ 2 25	— @ —
PIGEONS, ₱ dozen	1 00 @ 1 50	— @ —
TURNIPS ₱ bbl	50 @ 75	75 @ 1 00
" new, ₱ bunch	— @ —	4 @ —
CABBAGES—₱ 100	5 00 @ 8 00	1 00 @11 00
ONIONS—₱ bbl	7 00 @ 7 50	Nominal.
POTATOES—₱ bbl	2 25 @ 3 25	— @ —
" new, ₱ bbl	10 50 @12 00	5 00 @ 7 00
SWEET POTATOES—₱ bbl	7 25 @ 7 75	4 50 @ 5 00
CARROTS—₱ bbl	1 50 @ 2 00	— @ —
BROOM-CORN	7 @ 11	5 @ 11
STRAWBERRIES—₱ quart	50 @ 75	5 @ 8
APPLES—₱ barrel	4 50 @ 6 00	5 00 @15 00
CRANBERRIES—₱ bbl	— @ —	— @ —
BEETS, ₱ bbl	1 50 @ 2 00	1 25 @ 3 50
CELERY, ₱ doz	2 00 @ 2 50	— @ —
GREEN PEAS, new, ₱ bushel	1 50 @ 1 70	1 50 @ 4 50
STRING BEANS, new, ₱ crate	2 50 @ 3 00	2 00 @ 2 50
LETTUCE, ₱ bbl	— @ —	2 00 @ 3 50
SPINACH, Southern, ₱ bbl	1 75 @ 2 00	— @ —
TOMATOES, ₱ crate	1 25 @ 1 50	80 @ 4 00
ASPARAGUS, ₱ doz. bunches	60 @ 75	75 @ 2 50
WATER-CRESSES, ₱ basket	50 @ 75	30 @ 40
RHUBARB—₱ bunch	8 @ 12	2½@ 3
RADISHES—₱ 100 bunches	75 @ 1 75	1 00 @ 1 50
MAPLE SUGAR	9 @ 15	9 @ 15
GINSENG	1 25 @ 1 35	— @ —
CUCUMBERS, ₱ crate	— @ —	2 00 @ 2 50

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, from our daily record during the year, show at a glance the transactions for the month ending June 13th, 1874, and for the corresponding month last year:

1. TRANSACTIONS AT THE NEW YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 d's *this* m'th	559,000	5,849,000	1,915,000	167,000	58,000	758,000
25 d's *last* m'th	299,000	2,519,000	2,167,000	24,600	49,000	611,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 d's *this* m'th	237,000	4,107,000	2,312,000	89,000	104,000	1,416,000
25 d's *last* m'th	294,000	2,306,000	2,634,000	47,000	317,000	1,579,000

2. *Comparison with same period at this time last year.*

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 days 1874	559,000	5,849,000	1,915,000	167,000	58,000	758,000
26 days 1873	313,000	2,627,000	2,712,000	103,000	75,000	838,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 days 1874	337,000	4,106,000	2,312,000	89,000	104,000	1,416,000
26 days 1873	305,000	2,912,000	2,776,000	166,000	85,000	1,637,000

3. *Stock of grain in store at New York.*

	Wheat. bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Malt.* bush.
June 8, 1874	333,169	116,651	68,188	1,573	323,343	74,669
May 11, 1874	325,331	34,003	23,329	41,125	58,527	40,939
April 6, 1874	1,036,09	128,692	20,379	118,820	468,673	45,475
Mar. 9, 1874	1,320,813	734,511	26,578	61,416	751,375	22,276
Feb. 9, 1874	1,070,649	541,800	14,668	40,906	735,992	28,769
Jan. 12, 1874	1,235,418	1,146,202	1,131	186,208	514,117	35,483
Dec. 10, 1873	1,553,313	2,093,544	——	244,885	579,742	60,868

4. *Exports from New York, Jan. 1 to June 11:*

	Flour. bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Peas.* bush.
1874	357,738	15,083,546	7,021,900	443,193	100	257,585	236,916
1873	526,562	3,241,919	5,398,449	20,838	16,525	13,646	98,200
1872	363,380	3,242,961	6,966,769	252,624	22,658	15,178	——
1871	874,090	6,153,722	3,210,632	34,919	78,818	14,889	——
1870	727,997	5,435,282	130,519	36,595	——	9,378	——
1869	420,294	3,892,539	1,328,869	——	——	40,401	——
1868	403,556	2,580,805	3,559,097	158,093	——	39,008	——

5. *Receipts at head of tide-water at Albany each season to June 8th.*

	Flour. bush.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
1874	6,500	3,179,900	1,349,600	110,500	74,100	543,400
1873	26,000	1,131,800	1,672,900	114,400	13,000	346,900
1872	22,400	969,800	1,998,500	135,700	337,000	787,200
1871	48,500	2,511,500	2,093,800	38,300	29,700	593,300
1870	38,400	1,900,600	127,700	41,200	78,900	382,500
1869	28,500	1,534,000	718,000	124,400	11,800	519,600
1868	65,700	3,684,900	3,297,400	149,200	326,300	1,864,800
1867	17,100	21,700	592,100	28,000	28,200	276,500
1866	34,200	317,200	2,090,700	64,300	41,700	898,700
1865	94,100	547,900	731,800	51,000	114,300	1,944,300

New York Live-Stock Markets.

RECEIPTS.

WEEK ENDING	*Beeves.*	*Cows.*	*Calves.*	*Sheep.*	*Swine.*	*Tot'l.*
May 18	7,393	38	3,688	17,747	35,325	64,191
May 25	9,374	90	3,502	12,340	39,786	65,092
June 1	8,073	86	4,410	16,039	39,058	67,666
June 8	9,095	33	4,332	16,977	36,773	67,210
June 15	8,253	54	4,001	15,447	38,233	65,988
Total for 5 Weeks	42,188	301	19,933	78,550	189,175	330,147
do. *for prev. 4 Weeks*	35,613	242	11,056	57,232	163,394	268,337

	Beeves.	*Cows.*	*Calves.*	*Sheep.*	*Swine.*
Average per Week	8,437	60	3,986	15,710	37,835
do. do. *last Month*	8,903	60	2,964	14,308	40,373
do. do. *prev's Month*	8,358	134	1,200	16,695	31,528

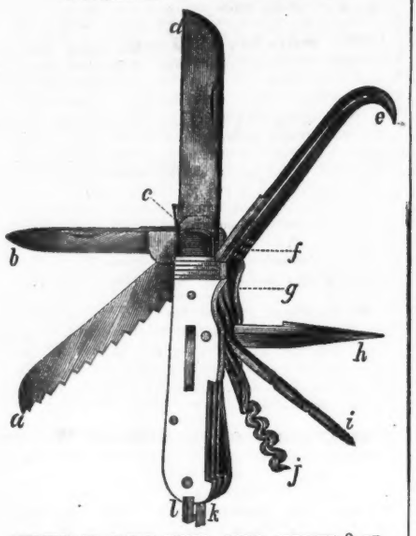
Beef Cattle.—The unprofitable business at the close of last month left dealers heavy losers. The natural consequence was the diversion of 70 car-loads of stock to other markets, and a falling off of 2,000 head in the receipts during the first week of the present month, as reported above. This gave a firm tone to the market, and a recovery of all that had been lost the previous week. The improved tone gained strength the next week, and the extra quality of the offerings helped the market to make another advance of ¼c. This improved feeling has marked the whole of the month's business, and a steady market throughout, with a constantly advancing value of the better grades, and a fairly active demand for inferior grades has been the result. At the close of our report the feeling is somewhat easier, and inferior Texans are decidedly weak, although the market was cleared early in the day of all supplies. Texans sold at 8¼ @ 12c. ₱ lb., to dress 56 to 57 lbs. per cwt.; common to prime native steers brought 11¼c. @ 12¾c., and selections to dress 58 to 59 lbs. ₱ gross cwt. realized easily 12¾c. @ 13c. ₱ lb.

The prices for the past five weeks were as follows:

WEEK ENDING	*Range.*	*Large Sales.*	*Aver.*
May 18	9½@12½c.	10¾@11¾c.	11 c.
May 25	9¾@13 c.	11 @11½c.	11¼c.
June 1	9¾@13 c.	11 @11¾c.	11¾c.
June 8	8¼@13 c.	11¼@11¾c.	11½c.
June 15	8¾@13¼c.	11 @12 c.	12¼c.

Milch Cows.—Dealers have met a brisk demand for good cows, and comparatively scant supply has kept the price for extra up to $90 per head, calf included. Common fair to good cows are selling at $50 to $75 each. .....**Calves.**—The market for veals has been irregular, and closes with a downward tendency. Buyers are holding off, and business is dull, at 4¾c. @ 6¾c. ₱ lb. for common to good State veals. Veals averaging 135 lbs. sold at 6c. ₱ lb.....**Sheep and Lambs.**—The business in sheep is reported as having been a losing one, and early in the past month sheep sold at a loss of $100 per car-load to the owners. Slaughterers also complain of an unprofitable trade, and the market closes without any recovery. Sheared sheep are dull, at 5¼c. @ 7c. ₱ lb. Lambs are also weak and declining, the last sales were at 8c. @ 11c. ₱ lb .....**Swine.**—The market for live hogs has been without business, all arrivals being consigned direct to the slaughterers. Dressed hogs have been easy throughout the month, with a gradual decline from extreme rates of last month to 7c. @ 7¼c. ₱ lb. The bulk of the business at the close was done at 7¼c. ₱ lb., with a tendency toward lower prices.

SPECIAL PREMIUMS
STILL OFFERED.



MULTUM IN PARVO KNIFE, OPEN—WEIGHT 2 OZ.

The General Premium List closed July 1st. The following Special Premiums are continued until further notice:

The Multum in Parvo Knife for 8 subscribers to *American Agriculturist* at $1.50 each a year. (Knife sent post-paid.)

The Beckwith Improved $12 Sewing-Machine for 16 subscribers to *American Agriculturist* at $1.50 each a year.

The Beckwith Portable Family Sewing-Machine, price $20, for 30 subscribers to *American Agriculturist* at $1.50 each a year.

BECKWITH PORTABLE $20 SEWING-MACHINE.

To secure the Chromo, mounted and prepaid, 25 cents must be remitted with each subscription for *American Agriculturist*.

N. B.—Two half-year subscribers in all the above cases may count for one full year in a Premium Club List.

Concerning the Advertisements,

We have a few words to say to our READERS: We mean to exclude everything which we think may be injurious or useless to the readers of this journal. We shut out all advertisements of patent and secret medicines, because we don't believe people ought to buy or use them. It is a pretty severe sacrifice to do this, because the medicine makers get from sick and nervous people dollars for what costs them half-dimes, and they can, and do, pay publishers largely for space in which to work upon the fears and hopes of the people. We also ask advertisers of good things, when they are not known to the editors personally, or by good repute, to furnish satisfactory evidence that they have both the *ability* and the *intention* to do what they promise to do in their advertisements, and if we are not well enough satisfied on this point, they are excluded. Our strict rules annually shut out a hundred thousand dollars of advertising, which is admitted into most newspapers. Sometimes, with all the care we can exercise, an objectionable advertisement gets in, but on our attention being called to it, we stop it. There have been one or two books, for example, admitted, which, though proper enough to be read by parents or adults of good judgment, we do not wish to bring to the notice of children or young people of prurient imagination. We shall try not to err even in this respect again. And now, after this explanation, we ask our readers to always look over and through the advertising pages. They will get many suggestive hints about business, by so doing. And further, as our advertisers are generally a good and reliable class of persons, and are in a good place, among good company, we like to have them know that they reach, through this journal, a good class of readers—*we* think the best class in the world. So when our readers send inquiries, or orders, or for circulars, to *our* advertisers, they will confer a favor upon them and upon us by mentioning the fact that the advertisement was seen in the *American Agriculturist*. (We may hint, privately, that this may be useful to the readers, for our advertisers generally know that if there is a "black sheep" among them who does not deal honestly by *our* readers, he will thereafter be liable to exclusion from these columns, if he does not also "catch it" by an editorial notice, that will not be of the most pleasing character.)

Please tell your Friends

THAT THEY CAN SECURE THE

AMERICAN AGRICULTURIST

Six Months for only 75 Cts.

In order to enable many persons to become acquainted with this valuable Journal, who have not hitherto taken it, the Publishers will receive subscriptions for it for the months commencing with July and ending with December, 1874, at seventy-five cents each. Will not each of our present subscribers speak "a good word" to friend or neighbor?—Please note: We will send the *American Agriculturist* for six months, beginning with July, 1874, for seventy-five cents. This offer, of course, does not include the beautiful chromo "Up for Repairs," which is offered to all *yearly* subscribers free, when taken at 245 Broadway, or twenty-five cents extra when sent prepaid. Give the paper a six month's trial trip, or better still, try it a year.

... P. S. ...

Better Still!

BEAUTIFUL $5 CHROMO,

AND

Half a Year's Subscription,

ALL

For a Single Dollar.

Considering the hardness of the times, and in order to meet the wishes of a great number who desire to have our beautiful chromo, **"UP FOR REPAIRS,"** but who did not feel able to pay the $1.75 required to get it, the Publishers have just decided to send the *American Agriculturist*, from July 1st to the end of the year, and to *deliver, free of postage*, a *mounted copy* of this beautiful **Chromo,** which has given so much pleasure, all for $1, if promptly called for.

☞ Please make this known to all your friends and neighbors.

containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Remitting Money: — Checks on New York City Banks or Bankers are best for large sums; make payable to the order of **Orange Judd Company. Post-Office Money Orders** for $50 or less, are cheap and safe also. When these are not obtainable, **register** letters, affixing stamps for postage and registry; put in the money and seal the letter in the presence of the postmaster, and *take his receipt for it.* Money sent in the above three methods is safe against loss.

Postage: On *American Agriculturist*, 12 cents a year in advance. Double rates if not paid in advance at the office where the papers are received. For subscribers in British America, the postage, as above, must be sent to this office, *with the subscription*, for prepayment here. Also 12 cents for delivery of *American Agriculturist* in New York City.

Bound Copies of Volume Thirty-two are now ready. Price, $2, at our office; or $2.50 each, if sent by mail. Any of the last seventeen volumes (16 to 32) will also be forwarded at same price. Sets of numbers sent to our office will be neatly bound in our regular style, at 75 cents per vol. (50 cents extra, if returned by mail.) Missing numbers supplied at 12 cents each.

Our Western Office.—Our friends in the West are reminded that we have an office at Lakeside Building, Chicago, Ill., in charge of Mr. W. H. Busbey. Subscriptions to *American Agriculturist* are taken there, and sample copies of the paper and chromo are delivered, and orders received for advertising on the same terms as in New York. All our books are on sale at the Western Office. Please call and examine, buy, subscribe, and advertise.

Sale of Hearth and Home.—During four years past, the Publishers of this Journal have also issued the weekly HEARTH AND HOME. Mr. Judd has been absent in Europe for a year, and experienced so great benefit in the improvement of his health, that he desires to be more at liberty in the future to devote himself to the *American Agriculturist*. The Publishers have therefore deemed it expedient to be relieved of the care and labor of a weekly journal, and HEARTH AND HOME has been sold to the Publishers of the Graphic Company, of 39 and 41 Park Place, who will hereafter issue it with illustrations by the new photographic process. And now, with the well-known and well-tried corps of Editors at their posts, and with the attention of all concentrated upon this Journal, the Publishers are confident that their old favorite, the *American Agriculturist*, will be more than ever worthy a place in every home.

Other Basket Items on page 273.

SUNDRY HUMBUGS.—It seems necessary to remind our friends, from time to time, that this column is not the place in which individual grievances can be set forth. We take quite as much care to avoid doing injustice to innocent parties, as to do justice to those fraudulent persons, who deserve the distinction of a place among humbugs. Men, on the average, are suspicious, and if mistakes occur in their dealings with persons at a distance, they at once conclude they have been defrauded. There is no business in which dissatisfaction is more likely to occur, than in that of seedsmen. Probably not one person in ten can sow seeds properly, yet all failures, from whatever cause, are set down to dishonesty on the part of the seedsmen. There is hardly one of our seedsmen, even those of the highest reputation, of whom we have not had complaints, accompanied with a request to put him among the humbugs. Upon investigating such cases, we have found that the fault was generally on the part of the complainant, and the dealer ready to make ample reparation, whenever the fault has been his own. In fact, no dealer in seeds, or other matters, in which a good reputation is all important, can afford—to put it upon no higher ground—to be dishonest. A seedsman, florist, or nurseryman, who gets a reputation for inaccuracy or unfairness, might as well shut up shop. The same remark will apply to dealers in live-stock of all kinds, from bees to Shorthorns. That Pennsylvania live-stock concern, of whom we have had so many complaints, would have been shut up long

ago, had any of the swindled parties one particle of spunk. Each of the many persons who has come to us with complaints, appears to have a good case, but instead of bringing the rascals into court, they write to us, and ask us to expose the concern, and not give their names. We are not in the catspaw business; and while, when convinced that systematic fraud is being practised, we are willing to take the risk of exposing it, we can not take up cases for which there is a ready remedy. The clergyman in Missouri, who thinks he has been defrauded in a bee transaction, a correspondent in New York, whose ducks' eggs did not hatch, and the one in Massachusetts, who is in trouble about his pigs, will see that we can not show up certain dealers as humbugs, upon their simple accusation, and without having available witnesses and facts to justify us before a jury, if need be.

HORTICULTURAL HUMBUGS

have been so frequently exposed in our columns, that we supposed no reader of the *Agriculturist* could be taken in by those French scoundrels, who appear each spring in our principal cities, sometimes as Lafayette & Co., and in other years under other names. These chaps have catalogues so similar, and pictures of their wonderful products so alike, that they are probably all parts of one great swindling concern. "Greenhorn" sends us one of these French-English catalogues, with the things marked which he has purchased, and asks if he has been "sold." Now, friend "Greenhorn," you have marked on this catalogue, "Mezel Cherry, eleven in one pound;" Pear, "Monstrous of Africa, heavy, four pounds;" "Prince's Plum, without stone," and other equally absurd things. If you do not know that "Tree Strawberries," with fruit weighing a pound; that apricots, weighing a pound each; that raspberries, with "large fruit as a egg of a fowl," are barefaced frauds, you have taken a very sure, but very expensive way of learning. Know, O "Greenhorn," that our nurserymen are as wide-awake as any other dealers; and if there were upon the face of the earth, any such trees or plants as are given in the catalogue you sent us, they would have them, if they had to send to the most remote countries. New York City is a great field for these impostors. Gentlemen who have country places, and who would, by no means, pay a skilled gardener bricklayer's wages, will spend their money freely upon these novelties, because they are "French," and their claims are set forth with unblushing impudence and lying. We confess to feeling very little compassion for those who throw their money away in this manner.....A New Yorker, who does not give his name, offers "Two of the greatest medicinal and sweet-scented plants in the world," "presented for the first time to the American public." One is *Nigella satire*, (intended for *sativa*), "makes one of the greatest tonic medicines in the world." If the friend who sent us the circular, knows of any old grandmother's garden, where the plants of fifty years ago are yet undisturbed, he will find this wonderful *Nigella*, grown under the name of "Nutmeg flower." Its only novelty consists in its antiquity; its seeds are aromatic, and were formerly used as a spice. The other plant is *Phillandrium aquaticum*, which should be spelled *Phellandrium*, and is now known as *Œnanthe*. This, it is said, "is used for bronchitis, consumption, and obstinate ulcers." Now, we advise all afflicted with either of these troubles, not to dose themselves at all, but especially not with this "*Phillandrium*," as it is a dangerous narcotic poison, and like related plants needs to be used with great caution. While we have no reason to doubt that the advertiser will furnish the plants upon the terms he proposes, they are offered under incorrect, and no doubt, mistaken ideas of their value; and so far as this goes, they are horticultural humbugs.

THE NON-EXPLOSIVE POWDER MAN

has been in Troy, and one Trojan speaks his mind on the subject. If any ladies take offence at what is said, they must remember that the remarks are not ours, but those of our irate correspondent. He, in substance, says: "I take your paper, and am pretty well posted as to the leeches of humbugs, but my wife, confiding as to women generally are, has been duped by one of them. An 'Agent' called at my house, with some powder to render kerosene oil non-explosive, and nothing would do but he must try some of it, to convince my wife of its qualities. He put some of it into a Perkins & House's safety lamp, and it has succeeded splendidly! It rendered both the oil and the lamp non-explosive, as it stopped up the tube which supplies oil to the wick, and of course rendered the lamp perfectly useless. I am not in the habit of using strong language, but if ever that agent comes within range of a 'Springfield' that I brought home from the war, I will try some powder that will not be 'non-explosive.'" Our advice to the Trojan friend is, to say nothing, buy a new lamp, and set the other aside, as a sort of beacon, to point out shoals and dangerous places. The wife has had her lesson, and has not paid half so dearly for it, as she would had she bought some quack medicine. It might be worse.

CHEAP AND WORTHLESS SEWING-MACHINES

are still complained of by those who are victimized by the venders. Some complain, that they saw advertisements of these things in a horticultural paper; such would do well to present their grievances to the paper, through whose agency they were induced to invest. We can not help those who have sent money, and receive nothing in return. It would require the whole time of one man to investigate all the various complaints, and amount to nothing. The best way is, to regard the amount lost, as so much paid for instruction, and if it teaches caution in future, it may not be a bad investment.

...Cheap Carpets. "J. L. H.," Kansas. We know nothing of the concern you inquire about, but if you succeed in getting good carpets at 37½ cents a yard, we hope you will let us know, as we would like some too.

A GRAND "PRIZE CONCERT;"

this time it is in Texas, and it does not pretend to be for any State library, children's home, or use any other charitable cloak to cover its sin. It is a prize concert for the benefit of the manager, and so far is above-board, but the circular accompanying the tickets, which are sent out freely to people in the Western States, says: "Should your State laws prohibit the sale of 'Prize Concert tickets,' (remember that they are concert tickets, and NOT lottery tickets,) you can then advertise for *applications* for tickets." If any one thinks he can get around the law by following this advice, he would soon discover his mistake in any law-abiding community.....That Kentucky Library lottery advertises one more final distribution, but it will no doubt keep at it so long as a dollar is to be made.

MEDICAL HUMBUGS.

There is one thing, that we have repeated again and again, and yet it does not seem possible to make it generally understood. It is, that it is perfectly useless to send to us for our opinion of any "doctors," who advertise cures, or advertise their medicines—no matter in what papers they advertise, or where they live, or how many distinguished names they may have appended to their "certificates," we hold them all to be unsafe, and to be avoided. Notwithstanding we have given this notice so many times, scarcely a day passes, but the mails bring us letters, asking about these advertising doctors. We have no acquaintance with any of these chaps, and we advise every one to let them alone; we make no exceptions whatever. Some are out-and-out swindlers, others are ignorant pretenders, without any knowledge of medicine whatever, and if, by chance, there is one among them, who has a right to the title of M. D., the very fact of his advertising his claims, and vaunting the cures he has performed, shows that he could not make himself a position in the medical profession, and has gone into quackery to make money.....Clark Johnson, M.D., Jersey City, turns up again, in the form of a letter to an agent in Texas, in which he says of the exposures in the "Agricultur*al*ist," "particularly do we ignore them since we know the cause to be jealousy of our unprecedented success."—This is pretty good for a man who does not exist. If there only was such a person, as Clark Johnson, M.D., what a fellow he would be!....A most pernicious little pamphlet bears the title of "Medical Good Sense," and claims to be published by the "Manhattan Medical Institute." This sets forth a delicate disease, which no one would care to have, in an alarming light, and then gives "an infallible test," by which those who had their fears excited by the description, may themselves tell, whether they have the disease or not. The test is, to put some urine in a pint-bottle, and set it in a cool place, and if at the end of three days and nights there is cloudiness or sediment, there is "unmistakable evidence" of a serious derangement, and, of course, the only safe thing to do, is to send some of the sediment to the author of this pamphlet for microscopic examination. Now, every one who knows anything about such matters, is aware, that cloudiness in the urine, after standing in a cool place, is a very likely thing to happen, and it is not an "infallible test" for anything. It is just a dodge of this humbug, to frighten people into coming to him for treatment.....There is a rascally Dr. "& Co.," in Dalton, Ga., who is using the U. S. mails for a nefarious purpose. The proper officers down that way should put a stopper on him or them....The medical humbugs are not a cheerful lot generally, but once in a while a bit of drollery turns up among them. A friend sends us an advertisement from a daily paper, which reads:

"TO CAPITALISTS.—DURING THE MEXICAN WAR of 1846 I was attached to the Army of the United States, and while there in 1847, obtained a very valuable medical recipe for purifying the blood, etc., of an aged Aztec Indian woman. I have not the means to bring it before the public. There is a fortune in it."

If any capitalist wishes to make a "fortune" by "purifying the blood, etc., of an aged Aztec Indian woman," we will give him the advertiser's address.

B. K. Bliss & Sons' Removal.—This seed establishment is on the move to 34 Barclay st. Cause, want of sufficient room in the old locality for the rapidly increasing business.

The Patrons of Husbandry have at last met with the only thing needed for their complete success—persecution. However swimmingly they have gone on upon their own merits, having now been thoroughly maligned, and held up as something to be avoided, they will prosper with unprecedented vigor. An Anti-Secret Society held a meeting a few weeks ago at Syracuse, N. Y., at which a new political party was proposed, and at which Mr. Chas. W. Green "went for" the Patrons and the Granges in the most absurd style. For the good he has done their cause, the Patrons should pension Chas. W. for life. In our view of the matter the officers and members of the order make a mistake in replying to him. Let him go on and advertise them.

Delaware Peaches.—Last month we gave a very favorable report of the prospects of the peach crop, since then an unfavorable change has taken place, much of the young fruit having fallen. If we accept the statements of the local papers, the estimate of 2,500,000 baskets, has dwindled down to about 100,000.

Hibberd's Horticultural Works.—Messrs. Groombridge & Sons, London, send copies of "The Amateurs' Flower Garden," "The Amateurs' Greenhouse and Conservatory," "The Fern Garden," "The Amateurs' Rose Book" and "Field Flowers," all by Shirley Hibberd, a horticultural author who is well known for his vigorous style and practical skill. These works are issued in a handsome form and finely illustrated, and are decidedly popular in England. They will be useful to such American amatuers as have sufficient horticultural knowledge to enable them to adapt their directions to the peculiarities of our climate. The same house publishes "The Floral World and Garden Guide," an illustrated monthly edited by Mr. Hibberd. The year's numbers of this make a fine volume.

Sale of Thorough Bred Horses.—The sale of horses from the studs of August Belmont, Esq., and Messrs. Hunter & Travis, took place at the Nursery, near Babylon, L. I., on June 11. There was a large attendance and the prices realized were fair on the whole. Several of the animals, however, were withdrawn for want of bids equal to their estimated value.

Valuable Reports.—Just as we go to press, there come to hand two reports too valuable to be disposed of in a hurried note: The Proceedings of the American Promological Society for 1873, and the Sixth Annual Report, by C. V. Riley, on the Noxious and Beneficial Insects of Missouri. These will receive attention another month.

Steam on the Canals.—The Baxter steam canal-boat has been awarded a premium of $35,000 by the Legislature of New York, on condition that six of the boats be put into service forthwith. A company has been organized, with a capital of a million dollars, to build and run twenty of these boats this season. The reduction in the cost of transporting grain between Buffalo and New York, by these boats, is about three-fourths of the former rates. Now we need enlarged canals.

Shipping Dressed Meats.—The Texas and Atlantic Refrigerator Company have now one hundred cars engaged in transporting dressed beef from Texas to Eastern cities. One hundred beeves are slaughtered daily at Dennison, Texas, and the number will soon be increased to five hundred.

The English "Lock-out."—The "lock-out" of English farm laborers still continues. This is really a strike upon the part of the farmers, who are the employers of the laborers, the desired effect of which is to destroy the agricultural laborers' union. The need for laborers is pressing, and Belgian immigrants are being introduced, to take the place of the union laborers. The introduction of Chinese laborers into England has even been suggested. It is difficult to realize the altered condition of things in England, as evinced by these occurrences.

The Tobacco Leaf.—"J. W. H.," Hartford, Ct. The "Tobacco Leaf" is a weekly journal, devoted wholly to the tobacco interest, and will be found to contain a large amount of special information, of value to tobacco growers. It is published at 142 Fulton street, New York, for $4 a year.

See Page 273 for other Basket Items.

"Songs of Grace and Glory," is the title of a new music and hymn-book for Sunday-schools, published by Horace Waters & Son, New York. Price 35 cents. We rarely see such good mechanical execution in so cheap a work, while the hymns and music are of a better class than are found in many of the music-books for Sunday-schools.

Farmers' Conventions.—The Farmers' Reform Convention of Indiana met at Indianapolis, and the State Farmers' Convention of Illinois was held at Springfield, both on the same date, June 10th. Both bodies set forth a "platform," and nominated a ticket for State officers. In neither State is the governor to be elected this year, and the contest will be over the other officers. As these are the first general elections in which a distinctly farmers' party has taken part, the results will be watched with interest by both the friends and the enemies of the movement. The platform or enunciation of principles is in each State such as much commend itself to all who are not professional politicians. For ourselves, we rejoice at anything which awakens farmers to the fact that it is their duty to take a part in public affairs, and that it is a neglect of this duty which has allowed State matters to be mismanaged.

Holding On.—California farmers are now shipping their wheat direct to Liverpool, rather than sell at the current rate in San Francisco, which is about $1.85 per 100 lbs. Some time ago, the same wheat could have been sold at $2.35 per 100 lbs. An offer of 1,200 tons of choice wheat, to be delivered in July, at $1.65 per 100 lbs., was recently made and refused.

Buckwheat for Cows.—"W. L. C.," Montgomery Co., Ohio. Our own experience with buckwheat for dairy cows is unfavorable, at least so far as regards the quality of the butter. It is true that it increases the flow of milk, but the butter yielded is white, and of poor, greasy flavor. As to the increased quantity, that has probably been shown as well, by some experiments made at the farm of the Eastern Pennsylvania Agricultural Society, in January last. In a week's feeding, when wheat bran was added to the feed, sixteen cows produced 1,252 lbs. of milk, yielding 117 lbs. of cream, and 57⅝ lbs. of butter. The next week an equal quantity of buckwheat bran was substituted for the wheat bran, and the cows produced 1,262¼ lbs. of milk, yielding 121 lbs. of cream and 59⅛ lbs. of butter. During the last week the cold was much greater than the previous one, which would show a still greater value for the buckwheat. Nothing is said, however, as to the quality of the product.

Crop for Green Manure.—"A.W. H.," Clinton Co., Pa. It is too late now to sow any crop for green manures, except buckwheat. This may be sown up to the latter part of this month. We would sow at least a bushel of seed per acre.

Time to Market Hogs.—"M.," Warren Co., Iowa. The best time to market a hog is when he has made the largest growth upon the least feed. For early spring pigs this is generally in the next winter. At eight or nine months a good hog well kept from its birth, might weigh from 200 to 400 pounds, according to circumstances. If such a hog is kept over the winter, and well fed all the time for another year, its extra growth will hardly pay for the feed, and it will be too heavy for packers' use. In winter-time there is less growth for the same amount of feed than at any other season, therefore the objects should be to have the pigs come early, feed them well, and kill as soon as desirable in the early winter.

Poultry for Eggs.—H. B. Lasher, Ulster Co, N. Y., writes that he is now managing a hennery for the production of eggs and fowls for market. He has 300 layers. We shall be glad to hear how our correspondent succeeds.

Corn Shelled or in the Ear.—"F.," Madora, Iowa. There is always more or less waste in feeding dry corn either in the ear or shelled. We have fed corn in the cob with the least waste, when it has been put into a barrel the day before it was to be fed, and scalded with boiling water, leaving it to soak until fed. This plan has been about as cheap as grinding the corn and feeding raw meal.

Sow-Bugs—Wood-Lice.—A gentleman from Westchester County, N. Y., came to us with specimens of a depredator, which makes serious trouble in his garden by attacking Asters, Amaranths, and other annuals, it being especially fond of Mignonette. The culprit proved to be what is, in this country, popularly known as "sow-bug." It is not an insect, but a crustacean, and more nearly related to the crab and lobster than to a "bug" of any kind. It is a species of *Oniscus*, usually found under boards and stones, in damp places, and though we have heard of its being troublesome in greenhouses, we never knew it to be annoying in the open border. *Oniscus asellus*, the wood-louse of England, is a pest in greenhouses there, especially to orchids. The gardeners in that country rely mainly upon trapping: the animals have a desire to secrete themselves in crevices, and traps are made by stuffing flower-pots full of hay, placing two boards together with a small stick, to separate them, so as to leave a hiding-place, or by cutting a potato in half, scraping out a portion of the interior, and placing it cut-side down upon places they frequent. If any of our readers have had any experience with this crustacean, we hope they will give it for the general good.

Sal-Soda for Manure.—"J. M. A.," Huntingdon Co., Pa. Sal-soda, or crude carbonate of soda of the shops, is of no value as a fertilizer. Common salt, which is chloride of sodium (sodium in the metal, the oxide of which is soda), is a far better means of supplying soda to the soil, and is frequently of great value. We have greatly added to the yield of clover and wheat by the use of a bushel of salt per acre, but never knew or heard of any benefit accruing from the use of sal-soda.

Poland China Hogs.—"A. G. F.," Warren Co., Iowa. The Poland China, or Magie hogs, can hardly be called thoroughbred yet, but, notwithstanding this, they are an excellent race of hogs where large size is wanted, and probably as good as any for general use where corn is cheap and heavy pork is saleable. They can be procured of any of the breeders whose names are found in our advertising columns.

"Split Hoofs."—"A. G. F.," Warren Co., Iowa. Sand crack or "a split hoof" is very difficult of cure, without entire rest until new horn grows from the coronet or upper part of the hoof. But light work may be done if any blacksmith can be got who can put a bar-shoe upon the foot. When this shoe is put on, the crack should be cleaned of all dirt or sand, and the edges pared evenly. At the upper end of the crack a hot iron should be drawn across the horn in the shape of a V, or a cut should be made with a sharp knife partly through the horn in that shape, so as to separate the entire horn from that which is cracked. The nail upon each side of the crack at the bottom of the foot should not be clenched until some strong, fine wire is wound in figure 8 form around them. They should then be clenched so as to retain the wire in place. When a new shoe is put on, the same should be repeated, bar-shoe as well, until the crack grows out altogether.

Sheep Nets.—"W. Y.," Wytheville, W. Va. The nets used in hurdling sheep are made in England. We have not the facilities here for making them cheaply enough. Mr. William Adamson, Gainesville, Pr. William Co., Va., writes us that he has imported some for his own use, and will furnish them to those who want them.

Manure for Clay Soil.—"E. W. C." After barn-yard manure, the best fertilizer for a clay soil is probably lime, with clover plowed under after it.

Butter from Sweet Cream.—"H. B. O.," Whitinsville, Mass. The butter referred to in the extract sent, and also at page 238 of "Flint's Dairy Farming," would not be marketable butter by any means, nor will it retain its flavor long. It is in fact a sort of sweet cream cheese, white, of delicate but not true butter flavor, and is not really butter. When we speak of butter, we refer to the article known and sold as butter in the markets and in daily use, and we know of no method of making this without some mechanical process of agitation as in churning.

Thorough-Pin.—"J. B. D.," Union Co., Ohio. The weak points in the large, heavy Norman horses are the feet and legs. They are specially subject to thorough-pin and other like troubles, and if they are cured, the difficulty generally returns as soon as they go to work again. The proper treatment, however, is to let the horse rest, take off the shoes, and let the feet rest upon soft, level ground, if possible. Use no shoes with high heel-corks, which, throwing the leg out of line, strain the sinews and cause wind-galls, thorough-pin and spavins. Use a Goodenough shoe when the shoes are replaced, and bandage the part of the leg with a long narrow strip of cotton-cloth, and keep it wetted with cold water, with tincture of arnica added in the proportion of one ounce to each pint.

"Alfalfa," or Lucern.—"M. A. C.," North Topeka. It is in vain to try to raise lucern (or the so-called alfalfa), unless the ground is free from weeds. Then it should be sown early in spring, in drills 9 inches apart, which might be cultivated with a walking sulky cultivator, by changing the teeth to suit the rows. In this way it would make a very rapid growth and soon cover the ground. It should be cultivated every spring in the same manner, if the ground is at all weedy.

Sowing Clover and Timothy.—"V. W. K.," Union Co., Ill. Clover and timothy may be sown in July. We once had an excellent stand, when they were sown with a crop of buckwheat on the 12th of July. On that occasion, 150 lbs. of Peruvian guano, sown with the seed, no doubt helped the grass and clover.

Feed for Early Spring.—"C. H.," Reno Co., Kan. The best feed for early spring is rye sown early in the fall. The ground may be prepared now or next month, and if low, it should be ridged in narrow lands, not over five paces wide. This will keep it dry during winter and spring. It may be pastured, and the ground afterwards plowed for corn.

Horn Ail.—"O. E. S.," Bath, Me. The disease known as horn ail, is not a disease of the horn at all, but a general constitutional disturbance, resulting from various causes, which shows itself by inflammation of and suppurration from the bronchial tubes, and the nasal lining and sinuses. It is very similar in effect to what is known as the epizootic in horses. It is probably better characterized as influenza, or catarrhal fever. There is much fever, dullness, and heaviness of the head, with heat around the base of the horns, and general distress and suffering. The best treatment is to give a purge, if the bowels are constipated, but if there is considerable looseness, an ounce of aromatic spirits of ammonia might be given, in a pint of water. The feet should be bathed copiously in hot water, and the body should be rubbed briskly with a coarse woolen cloth, and afterwards clothed with a blanket. If perspiration and discharge from the nostrils can be induced, a cure is begun. To effect this, a bag of scalded chaff should be hung around the muzzle, and wetted occasionally with hot water and vinegar. After the bowels are regulated, two ounces of sulphate of potash may be given night and morning, until the fever is reduced. Good nursing, plenty of cold water, and soft bran mashes, will finally bring the animal round again. If the disease is neglected, pneumonia may follow it, and is generally fatal. It usually follows a hard winter and poor keep.

Soiling Crops.—"Subscriber," Kendallville, Ind. Without knowing the exact condition of the soil, it would be difficult to say what would be the best grasses for a permanent pasture. On a strong, clay loam, however, it would be safe to sow in August, or early in September, 6 quarts of timothy, 1½ bushels (21 lbs.) of orchard grass, and 1 bushel (14 lbs.) of Kentucky blue grass. The ground should be made very fine, and should be rolled after seeding, instead of being harrowed, which would cover the seed too deeply. In the spring, 6 quarts of red clover may be sown upon the last snow. These grasses may be sown with rye, which may be pastured in the fall, if sown early, and then be cut for fodder in the spring. The blue grass will not appear until the third year, when, if the soil and locality are congenial, it may in time occupy the ground. Tares or rape may be sown now for late fall cutting for fodder, or cabbage plants be set out; these can be purchased very cheaply by the thousand, or white, yellow or Cow-horn turnips may be sown, all of which will make valuable fodder crops.

White Leghorn Pullets.—Miss "M. A. C.," Chatauqua Co., N. Y., writes, that her 12 white Leghorn pullets have laid, in 5 months and 10 days, since December last, 103 dozen of eggs.

Underground Milk Cellars.—"W. J. H.," Brady's Bend, Pa. In the *Agriculturist* of October, 1873, we gave descriptions, and engravings, of buildings suitable for milk cellars, to be built in a bank.

Double-Yolked Eggs.—"A. D.," Louisville, Ky. The large eggs which contain double yolks are rarely hatched. If properly fertilized and successfully hatched, they would doubtless produce twin chickens, or by reason of a mechanical annexation of the yolks or growing bodies, they could produce malformed or monstrous chicks. A recent case of this occurred in Illinois, and is reported in a trustworthy paper. A chicken was hatched which had but one head, one neck, one breast-bone, and then the chicken separated into two bodies with four legs and four wings. The curiously malformed bird, or birds, was accidentally killed, and was found to have one heart, liver, and gizzard, but the intestines split into two about one inch from the gizzard, and there were two sets of them, one for each body. This was probably produced from a double-yolked egg.

Yield of Corn in Nebraska.—The State Board of Agriculture, of Nebraska, offered a premium of $50 for the best yield of corn in that State in 1873. The premium was awarded to M. M. Nelson, of Cass Co., whose crop was raised on thirty-five acres of ground, which was broken two years before. The statement sworn to by the grower was as follows:

Yield of corn upon the 35 acres	3,202½ bushels.
Average yield per acre	91½ "
Weight of corn, per bushel	63 pounds.
Total cost of the crop	$166.25.
Cost per acre	4.75.
Cost of corn, per bushel	$5^{1}/_{10}$ cts.

The variety grown was known by the local name of Mahogany. The cost is made up of the very reasonable, or we may say, very low charges of $1.25 per acre for plowing, 45 cents for planting, $1.80 for cultivating, and $1.25 for harvesting. We suppose the ears were stripped from the stalks, which were not "cut up," as is the method in the Eastern States.

Some Dairy Items.—"Subscriber," Colorado Territory. The lactometer is not made expressly for testing milk; its purpose is simply to test the specific gravity of a liquid. Used alone, it is a very fallible instrument, and is calculated to mislead as much as to instruct. A cream gauge should be used along with it, and then, in the hands of a skillful and judicious person, who is able also to use other tests in corroboration of its disclosures, it may be of some service. Any dealer in or maker of scientific instruments, or dairy implements, could furnish a trustworthy lactometer and cream gauge. We could hardly advise you to purchase at present Shorthorns of pure blood for dairy purposes, with a view to profit. The cost of cows of a good milking strain would be such as to preclude any profit, with milk at nine cents a gallon. At present, this class of stock is held and dealt in by breeders only, and is therefore scarce. It is in course of distribution, and by and by, as its numbers increase, it will become reduced in price. But it has a large field to extend over, and until that becomes fairly occupied, we may expect to see the best strains of Shorthorns retain a value which places them beyond the reach of a dairyman. However, it is probable that by searching among some of the breeders in Colorado, a young bull of good [illegible]ter could be picked up which might be crossed upon [illegible]ire or extra good native cows with benefit. The Ayrshire and Shorthorn cross has produced some excellent dairy cows. In selecting a bull for this purpose, one should be chosen from a heavy milking dam, and having fine bone, fine neck, wide chest, a loose mellow skin, and fine hair; the heavier beef-producing qualities may be ignored in a bull for dairy purposes. Butter at 35 cents a pound is more profitable than milk at nine cents a gallon, in a dairy of good butter-yielding cows.

Recent Discovery of Guano.—A short time ago, some extensive beds of guano were discovered in Peru, to the south of the Province of Tarapaca. An examination of the beds has recently been made by two surveyors, which were sent out by the Central Board of Engineers of Lima, Peru. Their report is of very great interest, as it shows that several large beds of guano, of excellent quality, exist in that locality. Those which have been surveyed, are estimated to contain nearly eight million tons; one of them alone contains five million tons of fine quality. These fortunate discoveries not only remove all fear of a present failure in the supply of guano, but indicate that there are yet other undiscovered beds in existence, which will provide a practically inexhaustible supply.

Peach Borers.—"L. F. M.," Piedmont, Mo. We doubt if coal oil or any other application will destroy the borer, when once at work within the tree. The only sure treatment is to kill the grub by some mechanical means. In the peach districts of Delaware and Maryland, "worming" is done as soon as the crop is off, as then there is a plenty of labor at hand. Each person is provided with a hoe, to remove the earth from the base of the tree, a strong knife, to cut away the bark and wood, to find the channel of the borer, and a wire or whalebone, to pass into the hole, and kill the invader. As the borer often enters considerably above the base of the tree, we can not see how coal oil, applied to the roots, will reach it.

Clean Seed Wheat.—"H. K.," Green Bay, Wis. Our course to procure seed free from weeds, is to go through a portion of the field, and gather every head of cockle and other weed that could possibly be harvested along with the wheat. This portion of the grain should be kept separate from the rest, and thrashed by itself, and kept expressly for seed. The usual careless habit of throwing the screenings from the grain into the barn-yard, is the source of a great part of the weeds upon farms. All such trash should be either burned, or, if mixed with light grain, ground, and fed to hogs or fowls.

Old Brood Mares.—"Horseman," Orange Co., N. Y. There have been many cases of mares breeding after the age of twenty years. The famous Lexington was foaled when his dam was twenty-three years old, and the dam of Dexter now has a foal at foot, and she is in her twenty-seventh or twenty-eighth year. The mare Katydid is recorded as having a foal at twenty-eight years.

Fine Mushrooms.—The finest exhibition of mushrooms we ever saw, was seen a few weeks ago at the seed-store of James Fleming, 67 Nassau street. For size, abundance, and excellent shape, they were truly remarkable. We learn that they were raised by Samuel Henshaw, gardener to J. C. Green, Esq., New Brighton, Staten Island, the same successful cultivator, whose improved Mignonettes was mentioned last month. Mr. H. has a cellar arranged for mushroom growing, and we hope he will give our readers an account of the method, which produces such fine results.

Grape Scissors.—There have been several contrivances for conveniently picking fruit, without

handling it, but we have seen none better calculated to do this than the scissors invented by S. W. Valentine, Bristol, Ct. The stem is cut by the blades of the scissors, and there is a spring which holds the fruit, until it is released by opening the handles. Grapes, especially, are much disfigured by having the bloom rubbed off by handling, and this will allow the picking to be done without touching a berry. The engraving shows the form of the scissors.

Rhubarb and Tomato Wine.—"N. M. L.," Iowa. Almost any fruit or vegetable juice, mixed with an equal measure of water, with about three pounds of sugar to the gallon, and allowed to ferment, will form an alcoholic liquid. That anything bearing the remotest resemblance to wine can be made from either tomatoes or rhubarb, we do not believe. We have seen many samples, which in the opinion of the makers were good, but in our opinion very poor stuff.

Breaking for Hedge Rows.—"C. C. R.," Barton Co., Kansas. The ground for a hedge row should be broken in August. The strip broken should be at least six feet wide, and should be plowed deeply, with an open furrow in the center. Just before frost, the ground should be plowed back again, filling the dead furrow, and turning one more furrow of sod upon each side. Early in spring, the ground should be plowed once more, throwing a ridge in the center of the row, upon which the hedge plants should be planted. The hedge will thus stand in the center of a ridge, not less than eight feet wide, and with a deep furrow upon each side, for drainage. If fire is feared, a fire guard, of six feet wide, had better be plowed around the fence. The fence row must be kept well cultivated.

How to Make a Root House—"W. J.," Reed City, Mich. Full directions for making root cellars of logs, were given, with illustrations, in the *Agriculturist* for October, 1873, page 376.

As to Pickles.—"Gardener," Albany, Ind. The usual market value of cucumbers for pickles is about the same all over the country. We have known but little difference between the prices in New York and the Western cities; if any, the prices in the West are higher. In New York, pickles come to market packed either in brine or vinegar, in barrels of forty galls. and half barrels. The barrels hold 1,000, 2,000, or 3,500, according to size, and are now worth $14 to $16. The half barrels hold 500, 600, 800, or 1,000, and sell for $4.75 to $6.00. The favorite size are the smaller ones, of 600 to the half barrel; these bring $5.50 at the present time. The fresh gathered "pickles" are generally sold to persons who pack them, at $1.25 per 1,000. The packers put them down in brine, and sometimes keep them two years, when the demand is dull. The value in Chicago or St. Louis is about $16 a barrel, generally. An article on pickles will be found on page 262.

Draining "Sticky" Land.—"J. N. Z.," West Charlotte, Ohio. Black sticky land, with a clay subsoil, would undoubtedly be improved by draining. Much of the sticky character would probably disappear after it is freed from water, and it would become looser and mellow. This effect has repeatedly been realized by draining, and it is one of its most marked improvements. At all events, it would be safe to experiment upon a strip at the lowest part of the land first.

Disease amongst Lambs.—"J. E. G." West Falmouth, Mass. We know of no disease amongst lambs, attended by such symptoms as soreness of the eyes, and swelling of the eyelids, unless it be what is known as opthalmia. This is accompanied with considerable general disturbance of the system, as shown by a dry, hot mouth, loss of appetite, and suspension of rumination. The wool feels harsh, and the lambs keep away from their companions. It is probably due to poor keep, and when on a bare pasture, the flock is exposed to the reflection of light and heat, from the bare ground. Cold, damp, and exposure to cold winds, will also produce it. Immediate care is needed, to avoid ulceration of the eye, which frequently follows the inflammation. The lambs should be kept up in a dark stable, and a few drops of a solution of one grain of chloride of zinc, in an ounce of water, should be syringed into the eye four times a day. Rags, dipped in a mixture of a pint of water, and two ounces of landanum, should be hung, by means of a string, around the head, so as to cover the eyes. A tea-spoonful of Epsom salts, dissolved in water, should be given to each lamb, and a quarter of a pound of linseed-meal daily, would be a help.

Bees.—Some one at Dennisport, Mass., sent his letter without signing it. Had he given his name, we should have sent him Mr. Quinby's circular, which would have answered his questions.

The Dairy in the North-west.—"W. S. S.," Chatauqua Co., N. Y. There is no risk whatever as to the quality of the product in dairying, in either Kansas, Nebraska or Minnesota. The native grasses of the prairies are abundant, and produce excellent butter and cheese. We have never seen anywhere else, than on these prairies, such high-colored or sweeter flavored butter or richer milk. The very common grass, with narrow leaves, known as *Boutelova*, and which is frequently mistaken for Buffalo-grass (*Buchloe dactyloides*), is productive of very rich milk, and the best of butter. This grass does not disappear, as the Buffalo-grass does, when the prairies come to be occupied by settlers, and it would doubtless furnish the most valuable, although rather thin, pasture for a number of years, if indeed it would not be permanent. The late prairie grass is also nutritious, and gives a heavy crop of hay. The chief drawbacks are want of water and shelter, but the first exists only in some localities, and the other will soon no longer exist. Already there are abundant openings for cheese factories and creameries, and in many cases tempting inducements are offered by the farmers for dairymen to go in and erect factories.

Summer-Fallowing Prairie.—"M. A. C.," North Topeka. We would not summer-fallow a prairie soil that is rich in vegetable or soluble mineral matter. The chief object of summer-fallowing is to kill weeds, but they may be killed without it. Another object is to work up and expose a hardly used soil to the air and weather, to mellow it and improve its condition. But on a soil that is already in good condition, yet full of weeds, it would be just as well to let the weeds grow, and plow them under before they blossom. If the greater part of the seeds can be destroyed, by one or two plowings in this way, a great good may be done, and the land may then be put in fine condition for a fall wheat crop. But we would encourage the weeds to grow, and keep the ground well covered until it is again plowed, rather than keep it bare by constant harrowing. A well-cultivated corn crop would answer the same purpose.

What is "Pi"?—"E. W. C." The word "pi" means a quantity of type scattered irregularly. In the puzzles on the last pages of the *Agriculturist* it means letters out of their proper place in the words, and thus meaning nothing; the puzzle is to so re-arrange the letters as to make the words read correctly. This gives amusement to both children and old folks, and helps to make boys and girls think quickly

Health of Farmers.—The Massachusetts State Board of Health, in their fourth annual report, have a paper upon the sanitary condition of farmers, based upon the reports of the country physicians throughout the State. Evidence collected for 28 years past shows that the average length of the life of a farmer, in that State, is 65¼ years. This is much longer than that of any other class of citizens. The class most nearly approaching farmers, viz.: out-door mechanics live only 52½ years on an average. But the almost unanimous opinion is that farmers might live much longer than they now do by exercising more care in choosing, cooking, and eating their food, in avoiding overwork and exposure to change of weather, and the use of foul drinking water. Their food consists too much of pork, pies, and saleratus bread, and cakes. The cookery is bad, and meals are eaten too quickly for good digestion when work hurries. More vegetables and fruit should be eaten, and more rest taken. More cleanliness as regards out-houses, sinks, and back-yards, should be observed, and more care taken to avoid leaving cess-pools, sinks, etc., nearer a well than 30 feet at the least.

Sale of Shorthorns.

The sale of the Forest Hill herd, property of J. H. Spears & Sons, took place at Jacksonville, Ill., May 27th, the forty-three animals bringing $33,000. The bull Cherub 2d (one year old) was sold to Gen. Charles L. Lippincott for $5,800, the largest price ever paid for a yearling bull. The cow Duchess of Sutherland was sold to Gen. Lippincott for $1,600, and her bull calf to S. K. Reigins, Petersburg, Ill., for $1,050. These were the highest prices paid. The purchasers were all residents of Illinois, Indiana, and Iowa, the majority of the animals remaining in Illinois.

It is stated that Mr. Geo. Robbins, who bid $14,000 for the Second Duke of Hillhurst at Col. King's sale, did not come to time in making satisfactory "arrangements," and the bull remains in Col. King's possession. We understand that he has refused all offers to purchase it since.

The joint sale of the shorthorn herds of Messrs. Taylor, Pickrell, and Elliott took place at Decatur, Ill., May 28th. The Lonans of the Taylor herd sold well, Lonan 6th (bought by E. W. Miller, Lulla, Ill.) bringing $3,110; Lonan 4th $1,760 (to J. Nichols of Bloomington, Ill.); Lonan 5th $1,300, to Claude Matthews, Clinton, Ind.; Lonan 3d $1,100, to Emery Cobb, Kankakee, Ill.; Lonan 8th $1,200, to Edward F. Ills, Springfield, Ill.; Oxford Duchess, $1,025, to J. Nichols, Bloomington, Ill. The imported bull, British Flag, three years old, sold for only $530, (cause, bad temper). The cows in the Taylor herd brought an average of $850. The Elliott and Pickrell herd sold at an average of about $300.

Notes upon other sales will be found upon page 259.

Swindling by Mail.

The mail trade of seedsmen, florists, and the like is now very large, and though from the nature of the case there is more or less delay and loss, yet it is on the whole a great convenience to dealers, and a great saving to purchasers. Among its disadvantages to the dealers is the fact that it allows of a considerable amount of small swindling, and there has grown up a set of knaves who systematically swindle them. Their mode of operation is generally to send an order, stating that the money is inclosed. The dealer finds no money, but the writer claims that he sent it, and it must have been lost, that he can ill afford to lose the sum, and appeals to the sympathy of the dealer, who, rather than have his customer suffer, usually sends the goods. These cases have happened so frequently, that the dealers have compared notes, and discover that the same parties play the same trick upon the prominent seed and plant dealers all over the country. The following, from a highly respectable seed firm in Rochester, gives an account of the operations of one of these correspondents, which will serve as a sample of the rest:

"Our first experience with this class of 'unfortunates' was with a party who has bemoaned his misfortunes in losses of money by mail for several years, with the greatest steadiness and persistence, and is not yet disheartened; he has repeatedly been rewarded for his style, which is 'childlike and bland,' by confiding seedsmen and is not yet satisfied—Mr. Ross A. Bagley, of Big Creek, Forsyth Co., Ga. His first letters to us claimed a loss of $10.80, which, being a man far removed from money-order offices, and unused to mercantile pursuits, he had sent us in all confidence; this also contained a proposition that we share his loss, as he was not able to bear it. We supplied promptly the full amount we authorize to be sent by mail at our risk, without registration, suggesting that his letter might have been registered at the post-office, and we could do no more. Again he pleaded, and again was refused; he closed the correspondence with an appeal, from which we quote: 'Send the chromo any way, if you sympathize with a poor man, who wished and tried hard to be a customer. I should have remailed you the money at the start, if I could have done so, but it is my misfortune to possess but few of this world's goods, therefore I could not possibly afford it. . . . . It is not my intention to ask for more than is right. I do not think the fault lies with you, and if you can not send the chromos willingly, we will drop the subject.' Our suspicion was increased by the studied air of modesty and confidence expressed in this note, and a gentleman connected with our house remembered the name as one that figured in a transaction where a neighbor of ours in the same trade had suffered considerably from an attack of Bagleyism. We found Mr. Jas. Vick possessing a file of papers in the familiar chirography of Bagley, and that he had an experience similar to our own. Seeking further to know the probable extent of the business as done by this particular individual, we requested information from other houses in the same line, and the responses came promptly, and of similar tenor. 'Mr. Ross A. Bagley,' say Messrs. B. K. Bliss & Sons, 'has favored us with his patronage,' and proceed to give in detail a repetition of the familiar story of a loss by mail and a request for remuneration. Peter Henderson & Co. say that 'in 1873 that accomplished rural rascal, Bagley, of Big Creek,' had found them ont, and bitten them, but not deeply, for which they are duly thankful. Jas. J. H. Gregory has a matter of a few dollars, for furnishing Bagley with seeds the last fall and the present month. We also learn from Reisig & Hexamer that he attempted to victimize them. It seemed to us that such frequency of misfortune should not be permitted to remain in obscurity, or a success achieved by such effrontery and low cunning be allowed to continue, and we present this case as one fit for exposure by the *Agriculturist*, to which other specimens of this new pest may be added by ourselves and other dealers. We do this as a protection to the trade, by giving timely notice to those who might otherwise suffer, and also warn any who might hope to escape detection in the 'ways that are dark and tricks that are mean,' by the pitiful littleness of the act.

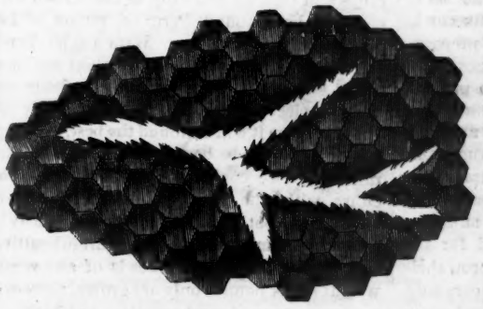
CHASE BROTHERS & WOODWARD.

"Rochester, N. Y."

Bee Notes.—Advice to Beginners.

BY M. QUINBY.

Cattle, while running wild, and receiving no attention from man, give him but very little towards his support. But after studying their nature, and cultivating it, he has from them, in addition to the hide and tallow, many of our choicest luxuries — milk, butter, and cheese. Bees, in their wild state, furnish wax, bee-bread, and a little honey mixed with it. With the same attention to their cultivation, that we give our cattle, we can improve their products equally as well. Cattle thrive and grow when running wild; so do bees, in their native state; but such thrift satisfies only those who are ignorant of what may be done. Such persons maintain that the nearer we follow nature, the more certain we are of success; but it must be admitted that this course is not always satisfactory. Fruit will grow without assistance from man. We prune, to allow light, heat, and circulation of air, our object is not to prolong the life of the tree, but to promote the production of fruit. So with bees; for the greatest success, attention must be given to a thousand little details, that have been too much neglected; and the person that judiciously attends to the greatest number of these, will succeed the best.



TRACK OF THE MOTH-WORM.

Since the introduction of the Italian bees, it has been discovered that they drive off the moth worm, much more effectively than the black bee. Yet when these are not very strong, considerable inroads are often made upon them, and much time is consumed in mending up mutilated comb, and replacing brood that has been destroyed, making all the difference between a handsome profit, and nothing at all. In such case, the person who knows nothing of bees, would complain that they did not pay, just as he would if he took no care of his cattle, and expected a first-rate yield of milk, butter, and cheese. We should understand that the moth, having a burthen of eggs to deposit, seeks a place for them, and finds it, usually in some weak hive, and that the young, when they hatch out, will take the sustenance near at hand. Wax-comb is their natural food. The moth is active in a temperature so cool, that bees exposed to it will move but little, but creep close together, for mutual warmth, leaving a part of the combs bare. There the eggs of the moth will be deposited. As soon as the weather is warm enough for a few days, or the air is warmed by the bees, these eggs hatch. No mature moth lives through the winter. The egg or the worm will live in a moderate temperature, and mature in warm weather. When the female has her eggs ready, they must be deposited somewhere. If every hive is strong enough with bees, to cover the combs, they will not be allowed inside. In such a case, the eggs are left near the entrance of the hive, in some crevice, or where the bees, in passing over them, will attach some of them to the little pellets of pollen on their legs, and being small, they are packed with it in the cells. When the hive is warm, there is where they hatch first. Some persons have imagined that the moth, when it can find no other place to deposit eggs, visits flowers covered with farina, and leaves them, trusting to the bees to convey them to the hive with the pollen. I have not room to give all the indications of this, but I hope closer observation will decide whether it be so or not. In the humid atmosphere of the cluster in the hive, the moths' eggs hatch. If there is brood enough to consume most of the pollen, as brought in, the worms, as they hatch, are carried out, and little harm is done. The worm, when not removed, commences eating the waxen comb that surrounds it, making a passage large enough for its body, and spinning a silken gallery, inside of which it travels. When the colony is moderately strong, and the brood of the bee has changed to chrysalis, and is sealed over, the head of the bee's chrysalis does not touch the sealing, by near an eighth of an inch. Over the heads of these bees the worm travels, consuming the sealing and ends of cells, and spinning the gallery, to defend itself from the bees. Now is the time to assist the bees, before the worm has matured. Without the movable comb-hive, nothing of the kind can be done. When the worm has its growth, and has destroyed perhaps a thousand cells, and maimed or killed as many bees, it leaves the combs, and spins a cocoon, in which to repose for a fortnight or so, to change from a crawling worm to a winged insect. They may be found in crevices around the bottom, or outside, which are often not large enough to admit their body, though they seem to have no difficulty in biting away any soft wood, till the dimensions suit them. Not one moth ought to be allowed to mature, to lay eggs for a future progeny. Take advantage of their helplessness now, and destroy them. When allowed to arrive at this state, we have neglected one of the advantages of the movable comb-hive, and of the new method of applying smoke to keep the bees quiet. Examination should have been made long before this. In the middle of some warm day, when most of the bees are at work, quietly take off the top of the hive; have the smoke ready, of course; the day may not be so very fine, and you will find necessity of using it more; take off boxes, if any are in the way; set them down, to prevent crushing the bees; now take out the combs, until you find sealed brood. If necessary, put on glasses, to be able to look closely, and if worms are at work, you will see a mark much like that shown in the engraving. With the point of a sharp knife, pick this off till you come to the worm, which is to be dispatched. Perhaps it is not half its full size yet, and half the mischief it would do is warded off. I expect ladies to do this more effectually than those of the other sex, who are in the habit of doing what they think a nobler work. It is a small matter to kill a moth worm; so it is a small matter to save a kernel of wheat. An accumulation of small matters is important. When the hive has but little honey, and the moth's eggs hatch near the bottom of the cell, the worm bites its way through the center of the comb, crowding the young bees outward, which does not immediately destroy their life; but the worm, in spinning its gallery, attaches its web to legs, wings, etc., of the bee, holding it so that it can not leave the cell when it has matured. They may be seen with their heads protruding, unable to emerge. As such bees are worthless when helped out carefully, it is well to cut them out, and find and destroy the worm or worms.

Strong stocks only are safe. I will not repeat now all the directions for securing strong stocks, but only add that every worm, small or great, should be thoroughly crushed whenever found, and one point towards strong stocks is gained.

Cabbages as a Field Crop.

The value of the cabbage as food for stock is rarely considered. Yet as a fodder crop to be consumed in summer when the freshness of the pastures is past, or as green winter fodder for young stock, fattening stock, milk cows or sheep, we know of none better. The value of the cabbage as compared with other fodder, known to be of the greatest excellence, may be seen by the following statement of the composition of the various substances here mentioned: for instance, there is in 1,000 parts of

	Water.	*Ash.*	*Pot-ash.*	*Lime.*	*Phos-phoric acid.*	*Soda.*	*Mag-nesia.*
Green clover	800	13.4	4.5	4.5	1.3	0.2	1.6
Green peas	815	13.7	5.6	3.9	1.3	—	1.1
Sugar beet roots	818	18.0	4.0	0.5	1.1	0.3	0.7
" leaves	840	6.5	1.9	0.6	0.3	1.5	0.7
Cabbage	883	12.4	6.0	1.9	2.0	0.5	0.4

Considering the excess of phosphoric acid, which is the most valuable of all the constituents of the ash, the cabbage is seen to be quite equal to sugar beets as a fodder, while this excess gives to it a special value for young and growing or milking animals.

Again if we compare the amount of valuable organic matter contained in clover and cabbage, we find the following, *viz.*, in 100 parts of

	Water.	*Albuminoids or flesh formers.*	*Carbo-hydrates. or fat formers.*	*Fat.*	*Crude fiber.*
Clover	80	3.3	7.7	0.7	4.5
Cabbage	89	1.5	6.3	0.4	2.0
Turnips	92	1.1	5.1	0.1	1.0

Thus although cabbage is not so nutritious as clover, yet the large amount of water it contains makes it a valuable fodder for winter when given with dry food, and it contains a very small portion of crude indigestible matter. It is, however, considerably more nutritious than turnips. The carbo-hydrates consist mainly of starch and gum. These substances are largely consumed in the respiratory process and help greatly to maintain the natural heat of the animal. As a winter food, therefore, the cabbage is seen to possess a high value, being superior to turnips and only slightly inferior to clover. From our own experience with it we consider it the very best food for ewes previous to and after lambing, as it causes a large flow of milk; and also far better than turnips, because no cutting is necessary and there is no danger of choking. The same advantages apply to it as feed for milk cows. For its culture considerable previous preparation is necessary, and for a crop for next season it is not too early now to begin to prepare the seed-bed. One great advantage of this crop is that a succession may be grown and an early crop may be ready for use in August, at which time it will be found of the greatest value for cows that are in milk. For this early crop the plants must be grown in the fall and wintered over in cold frames. The bed for the plants should be chosen in a dry, warm, sheltered place, and the soil should be carefully dug over with the spade or the fork, and made fine and mellow, and rich with well-rotted manure. For each acre of crop a bed of two square rods will be sufficient, upon which space one pound of seed should be sown. Drill sowing will be found more convenient than broadcast, as it will be necessary to keep the bed clear from weeds and the hoe can be used between the drills. The seed should not be sown until the end of August or early in September. We have found the large Drumhead the best for this early crop, as it is very hardy and upon rich ground comes forward quickly in the spring and grows to a large size. Heads weighing twenty pounds and over are not uncommon in a field of this variety. When the plants are about four weeks old it is best to transplant them to the spaces between the drills, by which they are checked in their upward growth and make more stocky plants with more spreading roots. The frames may be made by placing boards upon their edges between the rows about four feet apart, and nailing strips to hold each pair of boards together. The strips may be nailed about three or four feet apart, and loose boards laid between the strips to complete the covering. The loose boards may be removed during the days when the weather is not too severe, to give light and air to the plants. Upon very cold nights straw or coarse hay may be heaped upon the frames for protection.

The ground for this crop may be a corn or oat stubble plowed in the fall and manured well with ten to twelve two-horse loads of fine manure directly upon the plowed ground. The soil and manure should be mixed by a thorough harrowing or working with the cultivator, and then lightly cross plowed and left rough until spring. In spring, as early as possible, the ground should be harrowed level and marked out into rows three feet apart. A dressing of 200 pounds of fine bone-dust, superphosphate of lime, or guano spread in the rows will be found of great benefit. The plants should be set out two feet apart in the rows, and if troubled with the flea they should be dusted over with fine dry-slacked lime or soot. Clean cultivation is needed. A later crop may be made from plants sown in a hot-bed in March and planted out in May and June. For this crop we have found the Early Winningstadt an excellent variety, and growing to a good size. The late crop will be raised from seed sown in an open bed in May and planted out in July, and the Marblehead Mammoth or the Drumhead are probably the best varieties. If a piece of clover sod can be plowed and well manured early in this month, it will pay to purchase plants from the seedsmen if they have not been prepared at home. A good clover sod turned under has yielded us an excellent crop, and we have also raised a good crop by planting cabbages between the hills of corn and working them with the hoe. For these late crops and such a catch crop as that raised with corn we have found Peruvian guano or fish guano the best fertilizer. With a small handful of fish guano with every plant we have raised some good cabbages in a cornfield; but where a piece of ground can be specially devoted to them it will be found the best, although where it can not be had we would by all means raise what we could in every available spot, either with the corn or in vacant spaces amongst the potatoes. Over 7,000 plants may be raised upon an acre, and if by careful cultivation and liberal manuring heads of an average weight of six pounds only are grown, there will be twenty tons of most excellent and healthful fodder. Such a crop is by no means beyond the range of probability where the proper attention is given. We know of few crops which return a greater value for the labor expended, and it is one which stands heat and drouth better than turnips and equally well as mangels.

Ogden Farm Papers.—No. 53.

I have had an unusual amount of correspondence lately concerning land drainage, and there is evidently a decided revival of interest on the subject among farmers in various parts of the country—enough to justify a repetition of some points which are to be found in detail in the books on draining.

To begin with, there is no special charm in burned clay which will make wet land dry, and poor land rich, by the mere effect of its being buried a certain number of feet below the surface. In fact, the *material* in itself has nothing whatever to do with the effect of a drain, so long as it remains good. What is needed is an open channel, at the proper depth, through which water can find its way; having a continuous fall, so that it will be easier for the water *at every point* to run off through the opening than to soak away into the ground; and placed at a sufficient depth to leave enough dry soil above it for crops to grow to the best advantage. If such a channel exists it makes no difference what means have been used to obtain it. *While it exists and is kept open from end to end*, it will answer all the purposes of a good drain, whether it is made of tiles, of stonework, of gravel, of plank, of brush, or of any other material. A drain made by a mole-plow, so long as it remains a drain, is just as effective as though it were laid with the best tiles.

The considerations which should decide us in selecting the kind of drain to be used are *cost* and *durability*. The best, and in the end the cheapest, drain—where tiles are accessible at reasonable cost—is one properly laid with a good quality of small round tiles, having collars or sleeves to keep the pipes in line, and to increase the facility of entrance of the water. Such a drain is practically indestructible, and should last as long as the land itself. Where good gravel can be had on the farm, an excellent drain may be made by digging a narrow ditch and filling it to a depth of six or eight inches with gravel from which all stones over an inch in diameter and all fine dirt have been carefully screened. A drain made in this way will last almost indefinitely, and will be comparatively inexpensive. Brush laid in the bottom of a wider ditch, well tramped down, and covered with inverted sods before the earth is thrown in, will often last for many years and do good service. Poles and board trunks are also pretty good.

Stones are a favorite material, and it is possible to make a good and permanent drain with them—but they have the disadvantage of being very costly. It is a quite common opinion that tiles are more expensive than stones. I should say that wherever the smallest tiles can be laid down on the farm for $50 per thousand feet it will be cheaper to use them than to use stones, although these may be immediately at hand. A ditch for a tile-drain requires certainly not more than three-fifths as much digging and back filling as one for a stone drain, and the cost of collecting, handling, and placing the stones will usually be nearly if not quite as great as the cost of tiles—it is often more. Because the stones are procured and put in place without the actual outlay of cash, the expense is not always felt; but if it does not cost money, it does cost money's worth, and it would often be an economy to work out by the day and use the wages to buy tiles rather than to spend so much labor in hauling, preparing, and handling stones.

Good gravel, prepared as above stated, is often

cheaper than tiles, and it is better than stones. In making stone drains there is a preference in favor of using broken or small stones rather than to lay what is called a "French" drain, or a drain with an eye, because the latter requires the water to flow over an earth-floor, which it washes more or less according to the character of the soil, often undermining and displacing the stones which form the eye, or washing earth away from one place to deposit it in another to form an obstruction. Furthermore, surface water often breaks through from the top of the drain, carries dirt and rubbish into the channel to choke it, and helps to disarrange the stones. In using any other material than tiles, it is better to have a drain through which the water will *trickle*, than one through which it will *run* in a copious stream. This is the reason why a drain made with gravel or small stones is better than one made with large stones. It is better because less liable to become disturbed and made useless. One obstruction makes all the drain above it useless—often worse than useless—from the water accumulated in the upper part of the drain breaking to the surface at the obstructed point, and making a considerable tract springy and unfit for the production of good crops.

Another point connected with the draining of land often receives less attention than it merits. So much is said and thought about under-draining that there is too much disregard of the less important surface draining. Some soils are so tenacious that, no matter how well they may be underdrained, they will not allow the water of heavy or long-continued rains to pass through them so rapidly as it should do. In all such cases there should be surface gutters—more or less wide—to allow surface waste to pass off at once. These gutters should be always kept in grass, in order that the ground may not be worn away by the current.

It may be accepted as a principle that all farming land should be freed from the presence of excessive moisture beneath, and of surface water at the top. This is absolutely necessary to the economical cultivation of anything but rice and cranberries. At the same time, the work may be done much more cheaply than is usually supposed, and the exercise of a little common-sense will show that the desired result may be obtained more directly, more simply, and more cheaply than by the course often adopted. Many think that they must skirmish with soil water, coax it to run where it is not inclined to, circumvent it, attack it with "herring-bone" drains or "gridiron" drains, or apply some other "scientific" means to get rid of it. In draining, as in everything else, the scientific way is the simple, straightforward, practical way. The end to be accomplished is to take water from where it does harm, and lead it to where it can do no harm, and the natural law on which the whole process is based is this: Water runs down hill, and straight down the steepest slope of the hill. Consequently, if we wish to remove the water from a certain tract, we should not carry it diagonally, nor indirectly across the slope of the ground, but straight down the steepest descent, just where it would run had it its own choice. It is often required to collect the water of a number of lateral drains and lead it toward a convenient outlet, and to do this by following a line diagonal to the slope of the land, but the laterals themselves—the real drains—should run in the direction in which the water itself would run were it flowing over the surface. The reason for this is that this is the natural way for it to flow, and that if the drain is laid in this direction, the tendency of the water will be to follow it—while if another direction is taken, the tendency of the water will be to leave the drain and seek the more direct fall. If the land is made wet by a spring, the proper plan is, not to go around Robin Hood's barn to cut the spring off, but to "hit him straight in the eye." Take the spring where it is and as it is, and tap it at the point where it accumulates all its water—then its entire removal will be certain. Any other course will be more expensive and less effective. Springy hill-sides must be treated on the same principle: strike straight and deep into the water-bearing stratum, and give the water an easier and lower vent than it finds at the surface, then carry it by the most direct route to the bottom of the hill.

To drain a wet place of a few rods, it is not necessary to underlay it with a cobweb of drains; one drain cut quite across the whole width of the wet ground will often prove sufficient. It is one of the sources of expense in draining that too many drains are made. As a rule, if the complete and thorough drainage of the whole land is not needed (and often it is not), and if it is the chief object to bring the soil into good grass-bearing condition, the best course will be to drain the wet spots by as few drains as will do the work, to tap all springs which it is desired to get rid of, and to arrange for the complete removal of all surface water. Of course, the complete and thorough drainage of the whole land often is necessary. It was necessary at Ogden Farm, and the whole place is underlaid with tile drains, four feet deep, and forty feet apart; there are over thirteen miles of them. When work is to be done on this scale, the owner will take more comprehensive advice than could be given in a newspaper article; but it seemed probable that a few hints for men who do their own engineering, and much of their own work, would be as useful as anything that the past month and its letters have suggested.

The cost of tile draining—which for many reasons is the best wherever it is practicable—can not be exactly stated, for much, of course, depends on the character of the soil and on prices. In fair, solid clay, where not more than one-half the earth has to be loosened with the pick, a first-class tile-drainer, with proper tools, will dig, lay, and back-fill five rods per day, 4 ft. deep, 14 inches wide at the surface, and from 2 to 3 inches wide at the bottom. He takes out 45 cubic feet of earth for each rod of drain. An ordinary laborer would insist on a much greater width of ditch, (with ordinary tools he would need it), and if the drain were to be made with stones, a greater width would be necessary. Such a workman making a ditch for stones, say 4 feet deep, 24 inches wide at the surface, and 16 inches wide at the bottom, would throw out 110 cubic feet of earth for each rod of drain. The cost of twice handling the extra 65 feet of earth would be generally enough to pay for tiles, unless the location were very remote from a factory; it would often be much more than enough. The relative difference is equally great in making drains only 3 feet deep.

One other matter in which it is common to make a mistake, is in the size of tiles used. If of good form, and with well-fitting collars, 1½-inch tiles, laid with a fall of six inches in 100 feet, are ample for the removal of the rain-fall on an acre of land, and—to skip intermediate details—6-inch tile is sufficient for 40 acres. Of course, spring water (which is the rain-fall on other land brought underground to ours) will affect this rule, but less than is often supposed.

Now and then, by way of encouragement, I look back over the history of some of our Jersey cattle investments, and trace the directions in which particular strains of blood have been disseminated. Here is an instance: In the winter of 1867-8 we bought from Mr. Hartman Kuhn, of Philadelphia—together with some others—a young heifer to come in the next summer with her first calf. The price paid was $350. She arrived here safely, and did well. Her first calf was a bull, and in those days we did not consider a bull calf worth raising. The next (1869) was a heifer, Nora; the next (1870) a bull, Nebuska, used here as a yearling, then sold for $200, and went to Mississippi. In August of that year Nelly was sold for $750, and went to Massachusetts. In 1871 Nora had a heifer calf, Noreina; in 1872 a bull, Norajah, sold for $100, and went to Connecticut; in 1873 a heifer, Donora, sold for $175, and went to Tennessee; in 1874 a heifer, Belnora. In 1873 Noreina had a bull calf, Belnor, sold for $100, and went to Jefferson County, N. Y. She will be due to calve again in a few days. Nelly, Nora, and Noreina have always been very profitable from the time of first calving. The sales named above amount to $1,325, and we have still on hand Nora, Noreina, and Belnora. This result, in a little more than six years, from an investment of $350, is satisfactory. We have others whose report would be quite as favorable.

This number will reach its readers too late for the beginning of the haying—too late for the bulk of it, where farmers understand their best interests—but there will still be a great breadth to be cut, and it is not too late for the repetition of an oft-made suggestion—which I repeat, because my own experience has convinced me of its great value. There is but one *best* way of doing anything, and the best way to make hay is the following, or if it is not, pray let us have information as to a better one: 1. Start the mowing machine after five o'clock in the afternoon, and do no cutting after the dew is off of the grass in the morning. 2. On the first clear morning after the cutting, but not until the dew is well off, start the hay-tedding machines—as many of them as can be got hold of—and keep them going without unnecessary intermission until the last lock is hauled into the barn, or until the dew begins to fall in the evening. The more constantly the hay is stirred the better it will cure. 3. Begin hauling early enough on this same day to get all that has been cut safely into the barn or stack. By this process the crop will be put in in the best possible condition, and though it may *look* too green it will be quite safe to keep (if it has been well stirred), and will "spread" better than if made by any longer process. Should rain follow the evening cutting, no harm will be done, for the grass will not have its nutritious parts leached out until it has first been wilted.

Carriage and Pigeon House.

"A Subscriber" asks for a plan for a carriage-house with an apartment above for fancy pigeons. We give herewith a plan with elevation of a building adapted for these purposes. Fig. 1 shows the elevation of the building which has a carriage-house and stable for two horses below, a hay-loft above, and a pigeon-house above the loft. An alighting board runs

around the outside of the pigeon-house above the roof of the loft, and a ventilating cupola

Fig. 1.—CARRIAGE AND PIGEON HOUSE.

is placed upon the top. The arrangement of the interior of the stable is shown in fig. 2, and that of the pigeon-house in fig. 3. The nest-

Fig. 2.—PLAN.

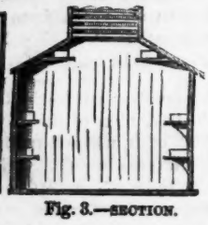


Fig. 3.—SECTION.

boxes are placed upon shelves around the walls, and a trap-door in the floor near the wall gives access from the hay-loft.

Natural Pastures.

We recently had the pleasure of visiting a farm in Litchfield County, Ct., where a large portion of the pasture land had never been plowed. There was at least one hundred acres, containing a good variety of soil and exposure, that had received no care from the hand of man since the forest was cleared off a hundred or more years ago. Some of it was hilly and strewn with boulders, some quite smooth and available for the plow, and other portions moist and covered with coarse grasses and rushes. The present owner and manager is eighty-five years of age, and has been in possession for sixty years, and one of his hobbies is natural pasture. He has followed the raising of Devon cattle and Merino sheep nearly his whole life, and these have been the important crops sold from the farm. The pasture retains all the natural grasses that originally grew upon the soil. The surface mold formed by the decay of the leaves and stumps of the forest has never been disturbed or exhausted by tillage. The annual crops of grass have been consumed by sheep and cattle, and the most of the manure has been left upon the soil. The raising of cattle to sell for stock has this advantage over dairying. The cattle are left in the pasture through the summer, while the cows are brought up to the milking yard at night, and at least one half of the manure is left in the yard. Sheep are in the pastures through the season, and their manure is quite evenly distributed. If there is any excess in any part it is upon the high ground and hill-tops, to which they generally resort at night, or when they are lying down. The portions of the pasture that are most exposed to washing and most likely to be poor receive the largest share of manure. The result of this treatment, in this case at least, is a complete vindication of the policy of keeping the plow out of land devoted to pasture. Everywhere there is a thick, heavy sod, and a good bite of grass, even upon the driest hill-top. There has been an increase in the capacity of the pasture to carry stock, and the feed is better now than it was sixty years ago. This man has attained a result by simple grazing with sheep and cattle, which others attain by expensive plowing, cultivating, and heavy manuring. May not the multitude of emigrants who are clearing away the forests in the new states and territories learn something from the experience of this old farmer? After the forest is cut away, and the trees and brush are burned, there is no need of raising wheat and corn several years to prepare the way for the grasses. If the grasses are not already there, the seed would catch readily upon the soft mold and ashes after the burning. The stumps would remain for a time, but they would not be in the way of sheep and cattle as they are in the way of the plow and the reaper. They would go to decay in a few years, and this decay might be hastened by burning after they were thoroughly dry. The ashes and mold would add to the riches of the soil and the luxuriance of the grasses. The thick, heavy sod, thus formed at little cost, would be a better investment than any bank or railroad stock. The cashier would not default. It could not be stolen. It could not be burned up. It would declare dividends while there were sheep and cattle to graze it, and a man to watch the herds and flocks. From what we have seen here and in other grazing districts of these natural pastures, we are convinced that a great deal of labor is worse than wasted in putting cleared forest lands into grass.

CONNECTICUT.

Lolling of the Tongue.

We have had many inquiries as to a form of bit, best calculated to prevent lolling of the tongue in horses, and we now illustrate two kinds of bits, that are well designed to prevent this disagreeable habit. The principle upon which they are made, is to prevent the horse from getting his tongue over the bit. If this is prevented, the tongue is seldom thrust out at the side of the mouth. Figure 1 shows a bit, having an attachment at the upper side, and an extra ring, by which it is kept in its proper position. The tongue can not possibly be got over this bit. But we have occasionally seen a horse which would thrust the tongue out beneath the bit. For such a rare case, the bit shown at figure 2 is provided. The plate upon this bit swings readily, and whether the horse attempts to carry the tongue out over or under it, it is turned, and prevents the movement. There can not possibly be any lolling of the tongue in this case. Both of these bits are made by Joseph Baldwin & Co., 254 Market street, Newark, N. J.

Fig. 1.—BIT.

Fig. 2.—BIT.

Binders for Sheaves.

The ordinary bands for binding sheaves are both wasteful of grain and time. A band that is ready-made, and which can be fastened instantly and tightly, would be a great convenience. For binding corn it would be a great boon. We here illustrate two methods of making bands which are used by French farmers, and which would be found useful to us, inasmuch as they are easily made, quickly fastened, and hold the sheaves securely. Figure 1 shows the hook, which is best made of malleable cast

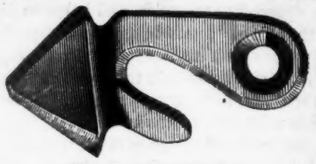


Fig. 1.—SHEAF-HOOK.

Fig. 2.—SHEAF BOUND.

iron. A cord is passed through the hole, and is knotted at each end. To bind a sheaf, the cord is passed around it and over the hook at the back, drawn tight, and then passed once around the tongue of the hook, and finally along the groove, and tucked in firmly between the straw and the hook, leaving the knotted end hanging loose. To unbind the sheaf, the

Fig. 3.—SHEAF-BINDER.

knotted end is pulled and the tie is loosened instantly. Figure 2 shows the sheaf bound with this tie. Figure 3 shows another and more simple tie, which is a long, narrow hook of stout wire, made with an eye at the end of the shank. This is attached to a cord knotted at both ends and at various places near that end which is distant from the hook. When

Fig. 4.—WIRE SHEAF-HOOK.

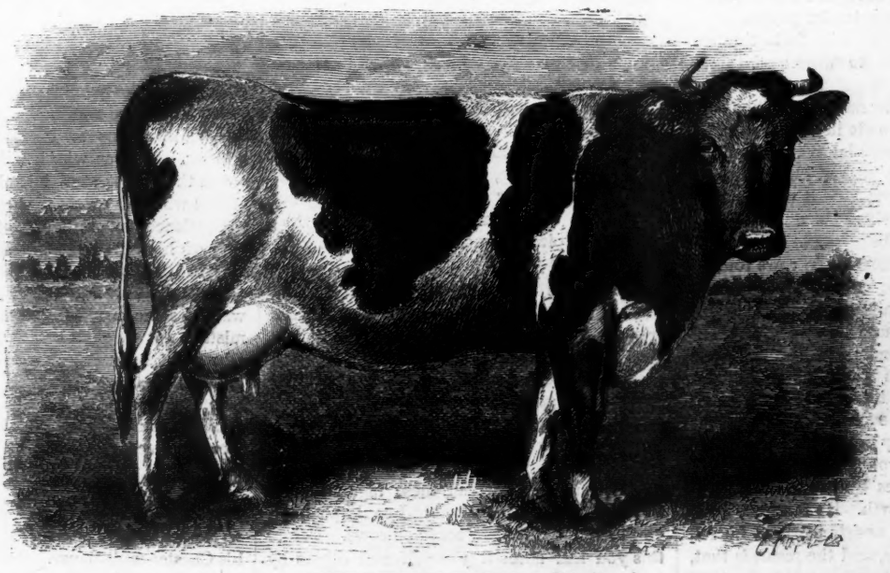
used, the cord is drawn tight round the sheaf and slipped into the hook, which holds the knot fast. Figure 4 shows another form of this tie, the catch for which may be made of strong wire, such as is used for fences.

Dutch (or Holstein) Cattle.

The engravings on this page are portraits of a Dutch bull and cow which took the first premium at the New York State Fair of 1873; they are the property of Gerrit S. Miller, Esq., of Highland Farm, Peterboro', N. Y. The bull, Rip Van Winkle, was imported in his dam in 1869, and is now four years old. The cow, Crown Princess, was imported from West Friesland in the same year, and is now eight years old. Her yield of milk in one day in 1871 was 74½ lbs., or about 34 quarts, and her average yield per day for six months was 50½ lbs., or about 23 quarts per day. Her feed was nothing but pasture during June, July, and August of this period. Mr. Miller feeds his cows in spring six quarts of grain daily, and in fall and winter four quarts daily. We assume that this cow had the usual allowance during the other months than those mentioned, although we have not been informed as to that.

PRIZE DUTCH OR HOLSTEIN BULL.

We are glad to have the opportunity of presenting the portraits of these two animals, because they are types of a breed of great intrinsic value and of great importance to our own dairy interest. The dairies of Holland have had a wide reputation for many years, and the Dutch butter and cheese have long been celebrated for their excellence. The Dutch cattle for generations back have been bred especially for their dairy qualities, but at the same time their large frames, well covered with flesh, have rendered them more than fair beef-producing stock. Some of the best qualities of the now fashionable Shorthorns have been derived from the blood of the shorthorn Dutch cows. The rich pastures of the alluvial fields of Holland have helped during all these years to build up a race of fine dairy cows prolific of milk, butter, and cheese, and which when they have become no longer profitable for the dairy quickly take on flesh and fat, and yield an excellent quality of beef. The color of these cattle is white and black, their frames are large and well covered with flesh, their skin is fine, soft, and mellow, their constitutions are hardy and robust, they possess the favorite points of dairy animals, are apt and hearty feeders, and arrive at an early maturity. Recently a bull of this breed was slaughtered in Philadelphia, and dressed over 1,600 pounds net weight of the choicest beef, portions of which sold in the market for fifty cents a pound. The Dutch cattle, then, may claim to be considered as first-class dairy animals and as respectable beef stock.



PRIZE DUTCH OR HOLSTEIN COW.

But it is as dairy stock we propose to consider them, and here condense from a communication sent us by Mr. Miller the following remarks in reference to the comparative excellence of the Dutch and Ayrshire cows as set forth by Dr. E. L. Sturtevant in a recent lecture before the Vermont Dairymen's Association, already alluded to in a previous number of the *Agriculturist*. It is admitted by Dr. Sturtevant that the cream of the Dutch cow's milk rises more quickly than that of the Ayrshire cow's milk. Mr. Miller therefore claims that, as a butter cow, the Dutch should stand before the Ayrshire of a butter family even. Further, referring to the experiments of Dr. Sturtevant as to the keeping qualities of the butter of cows of various breeds, in which pats of butter were placed in a warm cupboard near a steam heater, and their behavior under these unfavorable circumstances noted, he says: "There was one sample of Dutch butter, one of Guernsey, seven of Jersey, and two of Ayrshire; a few days later another pat of Ayrshire butter was added. The Guernsey butter was very high colored; melting point 99°; had an oily rather than waxy look, but was very attractive; it molded in spots in about a month. The Jersey butters in about seven weeks were all slightly rancid; one sample lost its color in spots, the white spots left resembling tallow in color and taste; no butter flavor. The Ayrshire butters had lost all flavor, were poor, very poor, but scarcely rancid. The Dutch sample the best preserved of the lot. This is another proof of the Dutch outranking the Ayrshire as a butter cow. The keeping quality of butter is certainly an important item in determining its value. As for the cheese qualities of the Dutch cow, if her cream and milk are so readily mixed, by stirring, it would give our cheesemakers but little trouble to secure the cream in the curd, as it is their custom to keep the night's milk in gentle motion to prevent the rising of cream. When comparing the Ayrshire and Dutch as dairy cows, it should be remembered that the Ayrshire has had a comparatively thorough trial in the best dairy districts of this country, and has been bred and improved here for many years; while with the Dutch improvement is just beginning. So far as my experience of four or five years goes, the Dutch have proved themselves equal to any, and are surpassed by no other dairy stock in the world. Not only is their yield of milk large, but the average proportion of cream it contains I have found to be at least 16 per cent." It would seem that Mr. Miller makes out a strong case for his favorite breed, and the reputation of these cows in their native country will go far to support him in his claims. It can not be doubted that there is a large opening amongst our dairies for the introduction of cattle of such excellence as the Dutch cows.

Walks and Talks on the Farm.—No. 127.

I had a visit the other day from four of the agricultural students at Cornell University. I enjoyed it very much. They were so genuinely enthusiastic and so anxious to learn. They got into the underdrains, examined the surface soil and subsoil, looked at the stones, the weeds, the crops, the fences, the implements, machines, horses, harness, whippletrees, pigs, sheep, grades, thorough-breds, lambs, and wool. It made me feel ten years younger to talk to such bright boys. One of them spent his last vacation on Dr. Hexamer's farm. Don't tell me that we have no young men who love farming, or that there is no call for agricultural colleges. There is a chance for Cornell to do something for agriculture yet. These young men speak highly of Mr. Roberts, the new professor of agriculture. I believe Mr. Cornell has always wished to give agriculture a leading position in the University. I hope he will yet do so.

"You have been predicting better times for farmers," said the Deacon, "but I don't seem to see them. Winter wheat looks miserable. Clover has been badly winter-killed. Old meadows are far from promising. The weather this spring has been cold and dry, and the crops have been put in late, and the prospects are that we shall have a light yield of oats and barley."

"This is a gloomy picture, Deacon," I replied, "but, admitting all that you say, I do not feel discouraged. When you say I have been predicting better times for farmers you do not quote me correctly. I have been predicting better times for *good* farmers."

The Deacon thought a moment, and then asked quietly, "What do you mean by a good farmer?"

This seemed a proper question to ask, but I knew the Deacon too well to suppose that he asked it with any other object than to get me into a corner. And so I thought I would touch the Deacon on some of his tender points.

"A good farmer is a man who feels that he was sent into this world to work and think. He has more faith in himself than he has in what some people call 'nature.' When the gooseberry saw-fly first made its appearance, he did not fold his hands and let the caterpillars strip every leaf from his bushes. He consulted the books, and found out that it was no new thing. He availed himself of the experience of those who had studied the subject. He set out some good varieties of currants in rows four or five feet apart, where he could keep the land clean and mellow with a horse hoe. He examined the bushes, and found hundreds of bead-like eggs glued to the underside of the leaves, and these he killed with his thumb and finger. He found, too, that the insect laid its eggs on the leaves of the young suckers. He cut off the suckers, and in this way not only killed thousands of eggs and young caterpillars, but strengthened the bushes by removing a large quantity of useless growth. He found that the lady-bugs came to his assistance, and he felt encouraged to persevere, and the result is that, while your old hedge-row currant bushes are used up, he gets a big crop of large currants that bring him $5 per bushel. And so this insect, instead of being an injury, is in reality an advantage to him. He gets better prices and far greater profits than when he 'let nature take its course.' I use this only as an illustration of a general principle. The codling-moth is destroying thousands and tens of thousands of barrels of apples in Western New York every year. A good farmer adopts means to hold them in check, and gets better prices for his apples than he would if there was no such insect. During the 'bearing year' he thins out his fruit, and the next year, when there is a light crop, he gets an average yield of fine fruit and big prices. It is the extra price and the extra yield that a farmer must look to for his profits. Take, for instance, an orchard of two hundred apple-trees, that produce 1,500 barrels of apples this year and 200 barrels next year. The crop this year is large and the fruit small, and it sells say for $1.25 per barrel. Next year the fruit brings $3.00 per barrel. It costs say 40 cents a barrel to pick, head up, and market the fruit, and 40 cents for the barrel. The returns are:

1874.—1,500 bbls. apples, @ $1.25	$1,875
Barrels, picking, and marketing, @ 80c	1,200
	$675
1875.—200 bbls. apples, @ $3	$600
Barrels, picking, and marketing, @ 80c	160
	$440

"On the other hand, suppose the orchard is in high condition, and instead of letting the trees overbear this year the owner thins out the apples and gets 1,200 barrels of choice fruit worth $2.50 per barrel, and the next year 1,000 barrels worth $3.25 per barrel. The returns are as follows:

1874.—1,200 bbls. apples, @ $2.50	$3,000
Barrels, picking, and marketing, @ 80c	960
	$2,040
1875.—1,000 bbls. apples, @ $3.25	$3,250
Barrels, picking, and marketing, @ 80c	800
	$2,450

"In the one case the returns in the two years from the orchard are $1,115, and in the other $4,490."

"But you do not know," said the Deacon, "that you will get $3.25 per barrel for apples next year."

"Of course not, but I got it last year, and what has been will be. I am trying to give you my idea of a good farmer. What is true of apples and currants is equally true of other crops. I sold potatoes this spring at $1.25 per bushel, hay at $30 per ton, butter at 40 cents per pound, and good beef and mutton are so scarce that I judge, from what he brings us, our country butcher can pick up nothing but old Merino ewes and half-starved yearling heifers. A piece of good sirloin from a well-fattened three-year-old steer is a rarity."

"All this is true enough," said the Deacon, "but by the time we have anything to sell prices will be lower. I tell you, farming is a poor business, and if it was not for your fancy pigs you would not talk so cheerfully. If I could sell pigs at two months old for $40 a pair I could make money by farming too."

"Now, Deacon," I replied, "that is what I call mean. Here you have been neighbor to me ever since I have had these pigs. And it was two or three years before I could persuade you to try the cross on common sows. Before this you had amused yourself and others by saying that they were too delicate for ordinary farm treatment, that they were too small for profit and too fat to breed, and, above all, that they were black, and that the butchers and packers would not buy black pork. My first litter of pigs were all killed but two. I felt discouraged, and all the consolation I got was, 'I told you so.' I took my pigs to the State Fair. One of my neighbors was on the committee. 'I hate a black hog,' he said, and when the awards came out my sow was put last and a grade white sow first. The next time I exhibited I brought home half a dozen or more first-prize cards, but my best sow shortly after she came back from the fair was stricken down with paralysis and never recovered. 'Too fat, too high-bred, too delicate,' were the kind remarks I heard on every side. After this I had two sows due the same day. One had a litter of eleven pigs. It was a terribly cold night in March. I sat up with her myself until one o'clock, kept the sow and little ones warm by keeping them covered with a blanket. I raised nine of them. The next morning I found that the other sow had had ten pigs, and my men, not knowing how to keep them under the blanket, allowed them to get chilled, and finally carried them into the house in a bushel basket without any covering, and left them there squealing. When I got up, and took them back to the sow, they were too far gone, and every pig died. I have lost a good many animals in my time, but do not recollect ever feeling the loss so keenly as I did this—because it was sheer carelessness. Farmers all over the neighborhood lost a great many litters of pigs that spring from sows that were certainly not too fat or high-bred, but that did not matter. Mine died because they were too delicate. After this my luck turned. I had three sows that produced thirty pigs, and we raised every pig and sold them for $25 apiece. They are scattered all over the United States, and have, so far as I have heard, given a good account of themselves. In that litter of nine that I saved during the cold night in March there were four sows. Two of them I sold, one to Mr. Weed of New York for $100, and the other to Mr. Hardin of Kentucky for $200. The other two I have yet. One we call Favorite and the other Rainbow. Neither of them bred until over two years old. Since then they have bred regularly, and have brought me in more money than any other two sows in the herd. I believe neither Mr. Weed nor Mr. Hardin had patience enough to wait for their sows to breed, and have abandoned the business. And you would do the same, Deacon. There is not one man in ten thousand who has the qualifications requisite for success as a breeder. My men who left the litter of pigs to die in the basket went into the woods to chop. It was what they were adapted for. It requires the patience and gentleness of a woman to take care of high-bred stock. Some time since a lady in Illinois wrote me that she was carrying on a farm for her fatherless children, and wanted some pigs. I sent her some, and if I mistake not we shall hear from her. We have all read of Lady Pigot's success as a Shorthorn breeder. I know a lady in Saratoga County who, without saying anything about it, is equally enthusiastic and skillful. Mark my words, Deacon, the coming farmer will be a woman."

Two years ago, J. A. W., of Center Co., Pa., wrote me that he wanted a pig to cross with his Chester-white sows. As he wanted a white breed, I recommended him to get a thoroughbred Suffolk. He did so, and now he sends me the weight of one of the pigs he killed when exactly one year old. He weighed the pig every week for the last six weeks. The smallest gain in any one week was 6 lbs., and the largest 20 lbs. His average gain during the six weeks was 11½ lbs. per week, or 1½ lb. per day.

His live weight was 386 lbs.; dressed weight, 354 lbs. This is a shrinkage of only about eight per cent.

L. R., of Tennessee, asks: "Why do you recommend wheat after oats? Why not wheat after clover? Is not the oat crop better to seed down with than wheat?"—Not in this section. Winter wheat is the best crop we have to seed with. Barley is our best spring crop to seed with; oats the worst. I was not aware that I had "recommended" sowing wheat after oats. I rarely, if ever, adopt the practice on my own farm. True, I sow wheat after oats and peas, but oats and peas together are a different crop from oats alone.

Mr. R. adds: "I hope you will excuse me if I say that I was sorry you remarked (in Walks and Talks for May) that wheat can be grown after wheat, corn after corn, etc. Not because I think that you are not right, but because a great many will make it an excuse to drop their established rotation."—I am not afraid to tell the readers of the *American Agriculturist* the truth.

"The rotation," continues Mr. R., "which I and others have practiced here with success is: Corn; oats; clover mowing; clover pasture; wheat. The wheat stubble plowed and subsoiled in the fall, hauling manure on it during the winter, and cross plowing in the spring. Then plant corn. We can not get a stand of corn on clover sod on account of worms."—If this suits the soil and climate and enables the farmer to clean the land to the best advantage it is not a bad rotation. It affords a capital opportunity to clean the land. You can plow immediately after the wheat is harvested, or perhaps, what is better, break up the surface with a heavy four-horse cultivator. You have three or four months to clean and mellow and aërate the soil. In Tennessee, too, I suppose land can be plowed more or less in winter. At any rate it can be plowed again in the spring and got into splendid condition for corn. This system has some of the features of my "fall-fallow." I would use it as a stepping-stone to something better. I would use it to thoroughly clean the land. But as soon as I got my farm clean I would sow clover with the wheat; mow it or pasture it one year and plow it up the next spring for corn. The worms would not be likely to give much trouble on a year-old clover sod, turned over immediately before planting. After corn, follow with oats or barley and seed down again. Mow the clover for hay and for seed the first year. Pasture the next spring; plow up in June or July; and sow wheat in the fall and seed down again.

I have a field I am going to serve in this way this year. It is a two-year-old clover sod. Was mown for hay and for seed last year and again for hay this year. As soon as the hay is off I propose to plow it carefully with three horses, and then roll and harrow, and afterwards keep the surface clean by the frequent use of the cultivator, harrows, and roller until the first week in September. Then sow on a barrel of refuse salt to the acre. Then drill in 1½ to 2 bushels of Diehl wheat per acre, sowing at the same time in the drills with the seed 150 lbs. of superphosphate and 100 lbs. nitrate of soda. In the spring, seed down with a peck of clover seed per acre and 100 lbs. nitrate of soda and 100 lbs. plaster.

J. D. W., of St. Croix Co., Wis., wants to know how to use straw to the best advantage. "I purchased the farm last year," he writes, "and there is in the stock-yard an accumulation of straw from the last ten years in all stages of decomposition, from pure muck to solid straw stacks. There is probably 500 loads. Which is the cheaper, to haul manure from town, 3½ miles, where I can get it for nothing, or to attempt to make manure out of straw? I hate to burn the straw, as my neighbors do, but if I keep on as my predecessor did my farm will be all straw stacks."—I do not think I am capable of giving good advice on this subject. Thirty years ago or less, farmers in this section threshed their wheat in the field and afterwards burned their straw to get rid of it. This spring I saw the poorest kind of poor straw sold in the Rochester market for $18 per ton.

"What of that," said the Deacon, "it would not have paid us to keep our straw until now."—Of course not, but it would have paid us to keep up the fertility of our land.

"But you are always saying that straw makes poor manure."—So it does when used alone. But in connection with clover hay, corn, bran, peas, and oats it can be used to great advantage. The most difficult thing I have to contend with in keeping so many pigs is to get straw enough for bedding. I could use four times as much as I grow. If J. D. W. will keep more stock, raise more clover, and sow less wheat he will find no difficulty in using all the straw he can grow. The straw and manure now on hand I would draw out at every leisure time and spread on the grass land. At the same time I would draw as much manure as possible from the stables in the city. It will certainly pay. J. D. W. gives a list of prices. Wheat, $1.10; timothy hay, $12 to $14 per ton; potatoes, $1.00 to $1.25 per bushel; onions, $1.50 to $1.75; oats, 60c.; corn, 70c. With manure for the hauling, and straw burned to get rid of it, I would pile on the manure until the land was rich enough to grow 400 bushels of potatoes, 800 bushels of onions, and 100 bushels of shelled corn per acre.

W. F., Centre Co., Pa., wants to know which is best to cross with common ewes—a Cotswold or a Leicester. If he could get a pure-bred, old-fashioned, genuine Leicester, such as Mr. Sandy, of Nottingham, used to breed twenty years ago, I think he would be better than the Cotswold. But there are now no such Leicesters. The so-called Leicesters of the present day are as large or nearly as large as the Cotswolds, and I do not know that they are in any way superior. My own opinion is that the Cotswolds are good enough. I do not want any better sheep than well-fed grade Cotswold-Merinoes.

"This is true enough for the first cross," remarked the Judge, "but after that they degenerate."—I know this is the common idea, and it is true provided you breed from cross-bred rams and ewes. But if you continue to breed to a pure-bred ram you can continue to "grade up" with very decided advantage. I have now lambs with three crosses of Cotswold, and they are very strong and healthy. I do not think it will make much difference whether W. F. uses a Cotswold or a Leicester. The important point is to get the right sort of sheep, and to get one that is pure bred.

A. S. Tipton, of Howard, Pa., asks: "Do you know of a cheap and better steamer than the Prindle?"—While I think it would be easy to make a better, I continue to use my old Prindle steamer. It is safe, simple, and convenient. I have had it changed so as to burn coal, and it is now far more effective, as we can keep up a hotter and steadier fire with less labor.

Steel Bars for Bells.

N. H. D., Fillmore Co., Minn., wishes a substitute for bells, which are very costly. He has read that steel bars have been used in place of a peal of church bells, at very little cost, and thinks, if this is true, that steel bars might be appropriately used for school-houses and farms. We believe the substitution of bars in place of bells for use in churches to any large extent has thus far only been proposed but has not yet been made. Yet as we have seen them frequently used in place of bells in mining districts to call the miners to work, there is no doubt of their fitness for farm and school-house uses. A bar such as is used for miners' drills, of octagonal steel, an inch in thickness and six or eight feet long, is bent into the shape of a triangle and suspended at one corner by a string or wire. When this is struck with an iron rod the vibration produces a sound which may be easily heard at a distance of a mile. The weight of such a bar is about three pounds to a foot, and the cost of Pittsburgh steel, which is equally as sonorous as the more costly English, is about fifteen cents a pound. A bar six feet long, of three-quarter inch steel, would answer for farm use; for a school-house the steel should be 1¼ inch thick, and the bar should be nine feet long. In the engraving we have shown the shape into which the bar is bent and the proper shape of the striking rod. The rod should have a wooden handle, and when not in use may be hung upon the triangle. The bar should be heated in a blacksmith's fire and bent over the horn of the anvil to the required shape. The heated portion should be allowed to cool gradually, lest it might break off at the bend when rung in very cold weather.

TRIANGLE AND STRIKER.

Getting Out Swamp Muck.

At the request of several of our subscribers we describe a method of digging muck from a swamp which can not be entirely drained, and illustrate it with two engravings. Figure 1 represents a very common kind of swamp, one in a hollow with high ground all around it, from which it receives the drainage. Many swamps of this character have a layer of shell marl beneath the peat, which, as well as the peat, is of considerable value as a fertilizer. To procure either the peat or the marl is a work of difficulty, because the soft nature of the ground forbids the use of oxen or horses until it is drained and dried to some extent. To commence to dig the muck under such circumstances we would level off a portion of the hill-side on the edge of the swamp, making a road of as easy a grade as possible to the margin. Then a boat should be constructed such as is shown at figure 2. It is of pine boards, nailed very securely to side pieces of pine plank, and has a center board to strengthen it. The

seams are calked with tow and pitch so as to make it water-tight. If made nine feet long, four feet wide, and sixteen inches deep it will float with a ton of muck. It should have a pair of runners beneath it, so that it may be

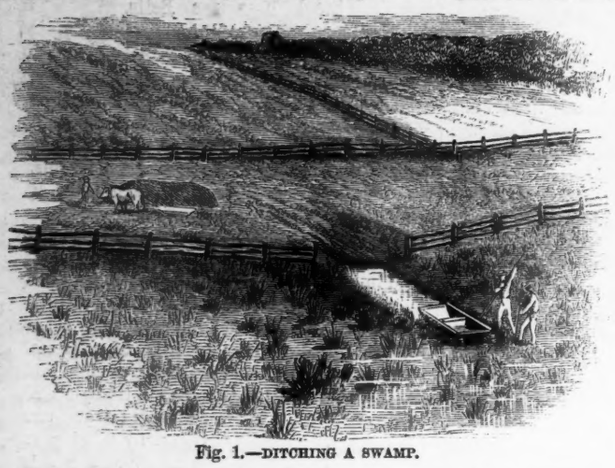


Fig. 1.—DITCHING A SWAMP.

readily drawn upon the ground when out of the water. At each side there should be a hook or eye to which a chain may be fastened. A strong eye should also be fastened on one side and at the bottom, into which the chain hook may be placed when wanted. All these are

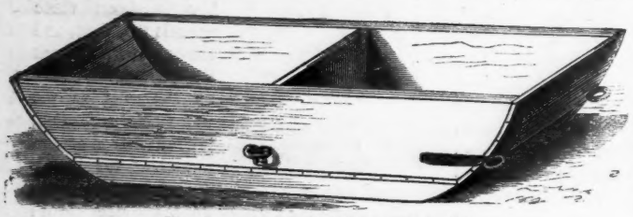


Fig. 2.—BOAT FOR GETTING OUT MUCK.

shown in the engraving. To commence the digging, the boat is hauled up to the edge of the swamp and loaded with muck, which is drawn to the place where it is to be piled. The heap should be as close to the swamp as possible, as, being so full of water, much labor is saved by hauling the muck home after it has dried for a few months. As the muck is dug

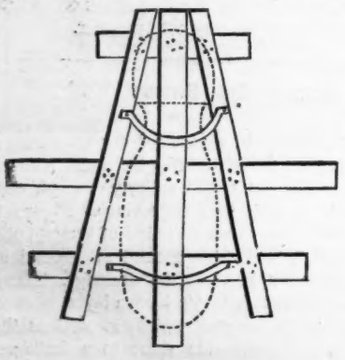


Fig. 3.—MUD PATTEN.

out, planks are laid down and pegged to the ground for a tramway, to enable the boat to be easily pushed into the swamp, which should be done by means of a hand-spike. By and by the muck will have been dug away sufficiently to allow the boat to float. Then the ditch is lengthened out until it is carried across the swamp. When the boat is loaded it is poled towards the landing-place with the hand-spike. If the ditch has been dug two feet deep it may now be deepened two feet more by commencing at the place of beginning and proceeding as before. The muck may be dug from the bank of the ditch with long-handled shovels if the bottom is not dry. By and by, as the ditch is deepened, the water will flow into the deep part and leave the shallow portion dry enough to work in. When one ditch is completed another may be dug, and in this manner a very wet swamp may be rendered dry enough for a meadow. The marl from the bottoms of the ditches will make an excellent dressing for the surface of the swamp as soon as it is drained. By excavating a pond in the lowest portion of the swamp and taking the supply of peat or marl from it, the water may be collected there and the swamp in a measure drained. When the boat is to be unloaded it may be drawn to the place where the muck is piled to dry; the hook of the draft chain is placed in the eye at the side, and the oxen or horses can easily upset it and dump the load. By reversing this method the boat is restored to its original position. A pair of mud "pattens" will be found very useful when working in the swamp. They are made, as shown in figure 3, of half-inch boards in strips 2½ or 3 inches broad for the bottom pieces and narrower ones for the two side pieces. A strap of leather passes across the toe of the boot and another buckles like the strap of a skate across the instep. With these one may stand or work upon very soft mud without sinking in it. In walking with these "pattens" it is necessary to carry the feet wide apart, or a closer acquaintance with the mud may be made than would be agreeable. The value of muck alone as a fertilizer is apt to be overrated. We can not agree with Dana in his "Muck Manual," that a mixture of muck, salt, and lime is equal to barn-yard manure. This compost lacks some of the most valuable constituents of well-saved stable manure. But as a basis for a manure pile, or as an absorbent in place of straw, we have found it to be very valuable, and the ease with which it is spread in the field is one of its great advantages. With a plentiful supply of muck on hand one may use all his straw for feed, and thus greatly extend his resources.

An Improved Ox-Yoke.

J. S., Philippi, Jefferson Co., Pa., sends us two drawings of an ox-yoke, which we have had engraved. He says this pattern, although very similar to that described in the *Agriculturist* of February, 1873, is better than that in some important points. The ends of the yoke are stronger, and less liable to split when made from this pattern than from the other, and

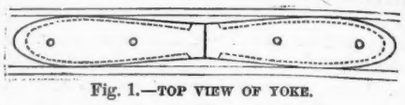


Fig. 1.—TOP VIEW OF YOKE.

neater in appearance. The bows are also better supported. This yoke is make from a block 8 × 10 inches thick, and preferably of basswood, cherry, or butternut, when used for light work, but where heavy work such as lumbering is done, soft maple should be used. The length of the yoke of which this is the pattern was five

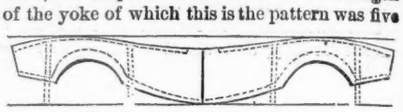


Fig. 2.—SIDE VIEW OF YOKE.

feet two inches, but the length will vary according to circumstances. The distance between the bow-holes at the top is eight inches, but for light oxen the holes should be made to suit the bows, and the bows should be made to fit each ox just as a collar is made to fit a horse. When making a yoke, it is best to cut out a piece of board the exact shape of the pattern shown at figure 1 and lay it on the block to mark out by. The dotted lines show the amount of the chamfer upon the edges of the yoke. The portion between the bow-holes should be rounded off to very much the shape of the ball of the thumb, which is the most suitable to fit the neck of the ox.

A Prairie Stable.

A "New Subscriber" writes us from Platt Co., Nebraska, and although he does not live in a sod house, he compliments us upon our representation of one. He, however, has a sod barn, and wants to know how he may thatch it with long prairie grass. Very opportunely we have a communication from another of our friends upon the Nebraska prairies, describing his plan of building a sod barn, which we here give with illustrations. His plan is as follows: Set four rows of heavy posts in the form shown at figure 1. For a stable 20 × 30 feet, five posts are set about 8 feet apart in each row. The first row, *a*, is 7½ feet from the next row, *b*; from *b* to *c* is 5 feet, and from *c* to *d* is 7½ feet. The outside rows should be 6 feet high in the clear, the inside rows 7½ feet. The posts are then joined at the top, lengthwise of the building, by strong plates. These may be laid in natural forked timbers or be firmly pinned to the posts. Rails are then laid about two inches apart upon the plates. Extra

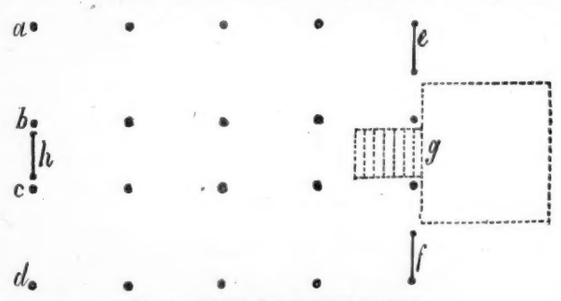


Fig. 1.—POSTS FOR PRAIRIE STABLE.

posts are now placed at *e* and *f* for door-posts, and at *g* two posts are placed meeting together at the top like a letter V inverted, and as wide apart at the bottom as may be needed for the door of the cellar. The frame is now finished,

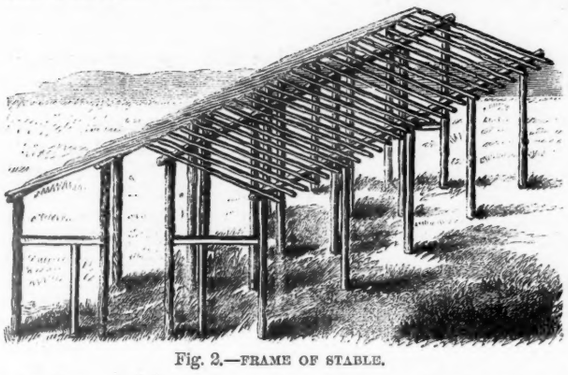


Fig. 2.—FRAME OF STABLE.

and is shown at figure 2. Then a piece of tough low prairie sod is broken, and the furrow slices are chopped with an ax into pieces twice as long as wide. The perfect sods only are laid up outside of the frame into a wall as thick as the length of the pieces of sod; the joints are broken carefully, and all spaces are filled with small pieces of sod. Where windows are wanted, the frames are put in at five feet from the ground, as the wall is built up, and closely sodded around. The walls are built up closely to the roof of rails. A thick coating of prairie hay is laid upon the rails and covered with sods closely fitted together. This again is covered with several loads of coarse prairie hay fastened down with hay ropes or poles. The doors are hung upon wooden hinges, wooden latches are fitted, and all the crevices are tightly packed with sod or hay. If wild cucumber-vines, hops, or other climbing plants are planted around the stable the building will be covered with a mass of verdure which will greatly add to its appearance. To fit up the inside, rails or boards are fastened to the rows of posts, *b* and *c*, which make an alley-way or feed manger, and a space is left between them so that the animals can put their heads through into the alley to feed. The cellar is then dug out, steps being dug in the earth for the entrance at *g*. The roof is supported by posts the same as that of the stable, and is covered with hay, then with earth, then again with hay and the earth that was thrown out of the cellar, until it is frost-proof. Shutes may be made at the sides of the cellar by which potatoes or roots may be unloaded directly from the wagon into bins. The entrance, *g*, should be covered with a trap-door. The stable should stand east and west if upon an open prairie without shelter, and hay should be stacked upon the north and south of the west door. The door opening into the feeding alley is at *h*. Sods cut in the summer or fall are more durable than if cut at other seasons. Figure 3 shows the stable with cellar complete.

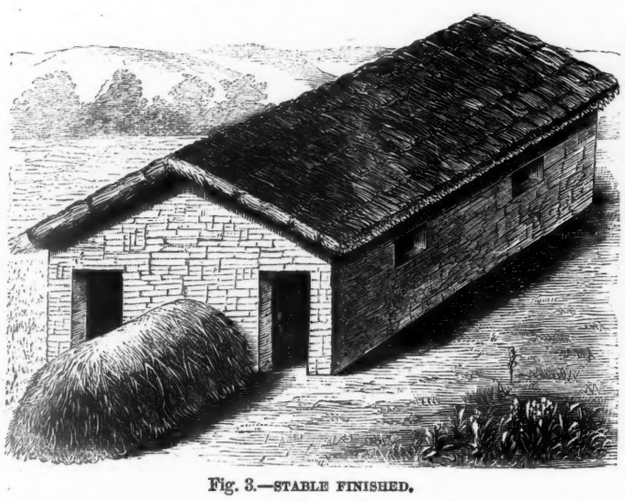


Fig. 3.—STABLE FINISHED.

When the roof is to be covered with coarse hay only, it may be done in the manner shown at figure 4. That is by taking tufts of long hay, previously dampened, and laying them upon the rails, commencing at the bottom and working in a row from one end of the roof to the other. As each tuft is placed, the upper end is turned under the second rail and brought over the first one, where it is tied by a twisted cord of the damp hay. When one row is thus laid, another is laid over it, leaving a few inches of the first row only to the weather. As the second row is laid it should be beaten down with a wooden paddle to compact it closely. To make a good job there should be at least six inches or more in thickness of hay laid upon the roof.

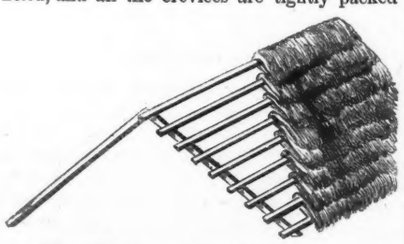


Fig. 4.—THATCHING ROOF.

Draft Irons for Plows.

One of the most important points in plowing is to have the draft exactly right. There are many things which may interfere with the draft of a plow to make it take too much or too little land, or cause it to run into the ground too much or not enough. A proficient plowman may be able to regulate this by altering the traces or otherwise adjusting the harness, but sometimes even this can not be done when the ordinary clevis is used. We give two illustrations of improved draft irons, by the use of which the draft may be regulated with great exactness. Fig. 1 shows one of these irons. It has a horizontal curved bar which is attached to the beam; this is pierced with holes about an inch apart. A vertical draw-plate is also fixed to the beam by means of a pair of straps and a bolt, as shown in the figure. The draw-plate swings to one side or the other, as may be required to regulate the side draft, and is fixed in the place in which it is to be used by a bolt and nut or a pin and key. The vertical draft is regulated by a series of holes in the draw-plate. Fig. 2 shows a variation of the same principle, in which the position of the bar and draw-plate is reversed—the bar being vertical and the draw-plate horizontal. After having tested both of these we are not able to give a preference to one over the other, and it is a matter of taste or convenience as to which is the more desirable. Probably that shown in figure 1 will be the most frequently chosen.

Fig. 1.—DRAFT IRON.

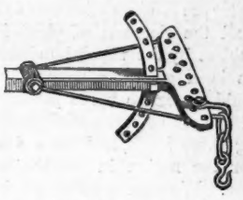


Fig. 2.—DRAFT IRON.

To Build a Chimney.

A correspondent writes us that his chimney "refuses to draw," and the smoke, instead of going up, curls downwards and pours out into the room for some time after a fire is built in the fire-place. The chimney is one of the old-fashioned ones, of large capacity, and that such a chimney should so behave is what surprises our correspondent. But this is just such a chimney as might be expected to do this. The fault is in having a throat of too great capacity. When a fire is made in the fire-place of such a chimney a current of heated air and smoke endeavors to pass upwards. But in its passage it encounters a current of cold air passing downwards to fill the space vacated by the upward current. These counter currents mingle to some extent, and where they mingle curls and eddies are formed. The smoke is entangled in some of these eddies of cold air, and falls with them to the bottom and pours out into the room. If a current of air could be directed towards the fire-place from some part of the room sufficient to overcome this downward current the fault would be cured; but it is seldom that this can be done, and to get relief a radical change needs to be made in the chimney. The back of the fire-place needs to be drawn in, instead of being carried up straight, until the passage for the smoke is contracted to a few inches in width, as shown in the accompanying figure. As soon as the contraction is made the chimney is again widened to its full width. Then the warm current escaping from the throat passes upwards, and the counter current reaching the throat is deflected into the heated stream (as shown by the arrows), which carries it upwards with it, and so prevents it from reaching the fire-place and causing it to "smoke." In building a chimney this should

CHIMNEY.

be carefully attended to, and of several which we have built in this manner we never had one that smoked at the wrong place.

The Cure of Alkali Lands.

Upon the plains in our new territories on both sides of the Rocky Mountains, there are vast tracts of alkaline soils so much impregnated that they yield nothing but sage brush and grease wood, or are entirely barren. If cultivation is attempted, a white crust soon forms upon the surface, and all cultivated plants die. There are millions of acres of these lands rich in all the elements of plant food, but made worthless by the superabundance of alkali. It has been generally supposed that these lands could never be made productive. The settlers of Utah have been entirely successful in treating these lands, and have done a good work for the nation in demonstrating their great value. We some months ago visited the farm of A. P. Rockwood in the Jordan valley, and saw meadows with a thick heavy sod, yielding three tons of hay to the acre, that were once entirely barren. We also saw upon a neighboring farm wheat fields that would turn fifty bushels to the acre reclaimed by the same process. This matter has attracted the attention of the British Government, as they have large areas of similar lands in India, that they have never been able to make productive. The Deseret Agricultural Society have given to the public the best methods of their farmers in reclaiming these alkaline soils. The secret of their success lies in a process of leaching the surface of the soil, more or less prolonged according to the quantity of alkali the soil contains. The field to be treated, of any convenient size, is first surrounded with a ditch about three feet deep, to carry off any water that may be run upon it at the upper edge. It is then laid off into strips about two rods wide by deep furrows running across the slope. The upper side of the furrow is ridged high enough to make a shallow pond covering the whole surface of the strip. The next breadth of the meadow is prepared in the same way, and so on until the whole is finished. Water is then taken from the irrigating ditch and turned into the upper basin, and this communicates with the lower basins until all are flooded. The water is allowed to stand for a few days in these shallow pools, when a frothy scum rises to the surface. It is then drawn off, carrying the scum with it into the outside ditch. As this large ditch is lower than the surface, the water charged with alkali is all the while draining off through the soil. The water is kept running over this land summer and winter, for one or more years, according to its character. In some obstinate cases it is kept in the leach four or five years, before it will bear good crops. In others a single season will subdue it. The best crops for the first season after treatment are found to be castor beans, cotton, summer squash, melons, onions, and lucern. A few inches of sand spread over the surface is thought to have a beneficial influence, facilitating the germination of seed, and preventing the formation of crust. It is agreed by all parties who have reclaimed these soils that they are the most productive lands in the territory, bearing successive years of cropping without any apparent diminution of yield. In some parts of the territory they have succeeded in reclaiming these lands without irrigation, but this is where there is more rain-fall than in the Jordan valley, and probably where there is less alkali in the soil. A. K. Thurber, of Spanish Fork City, mentions a tract in his vicinity formerly worthless but now used as an inclosed pasture, and producing good feed. He attributes the great improvement in its character "to the increased rain-fall of late years, and partly to the mixing of the grass with the earth through the tramping of cattle, and its becoming thereby decomposed." There is no doubt a large increase in the rain-fall in Utah, and this alone in some cases, has made the land productive. To facilitate the action of the rain the land is plowed up and down the slope that the water may run off freely upon the surface. The land is flowed frequently, and the particles undergo a change as they come in contact with the atmosphere, sun, rain, and frost. There are large tracts of these reclaimed lands in the territory yielding magnificent crops, and fine gardens and orchards loaded with fruit.

Grading Grain in New York.

The past gradual growth of the export trade in grain and its probable continued development in even greater ratio in the future, has necessitated a change in the method of handling the immense quantities yearly arriving at the port of New York, so that it may be transferred to ships with greater economy. Various propositions have been discussed, and vast warehouses and elevators, in which grain may be stored and to which ships may be brought to receive cargoes, have been contemplated, and a bill known as the Gardiner Warehouse bill was introduced into the legislature of New York for the purpose of authorizing their construction. Many serious objections, however, existed to this gigantic plan, both on the score of expense and convenience, and a very simple and inexpensive mode of storage of grain while it is awaiting shipping, has been proposed in its place by the merchants of the Produce Exchange. By this plan the grain will be stored upon the boats in which it arrives, or into which it will be transferred from the cars. The grain will be graded upon its arrival, and receipts given for it which will guarantee to deliver not the identical grain but the same quantity and grade which has been received. The identity of the grain received will, of course, be lost, but by the method of grading proposed, it will be in the same position exactly as so many dollar bills paid into a bank; while the same bills can never be drawn out again, yet an equal number of similar value may be procured on presenting a check. The warehouse receipt will take the place of the check, and will be a negotiable paper which can be sold or bought or transferred by indorsement, calling for so many bushels of grain of such a grade. We can not see that this plan is different in any way from the warehousing system in Chicago or Milwaukee, excepting that the grain is stored in boats, and is therefore much more cheaply stored than in costly elevators, and will be much more cheaply transferred to the ships or steamers than in any other way. Every dollar thus saved, of course, comes finally to the farmer who raises the grain or to the consumer who eats it.

NEED FOR PROTECTION.—The old adage that "shelter is feed," is well exemplified by the following statement of what occurred in southern Kansas during last winter. The quantity of Texan stock wintered in that district was greater than ever before. Feed was plentiful under ordinary circumstances; but the winter was open with frequent long-continued rains, and the cattle utterly without shelter and chilled to the bone refused to feed or trampled their fodder into the mud and wasted it. Strong three-year-old steers lay down in the mud and never rose again. Out of one herd of 127 head only one was left alive. Many large herds lost 20 per cent, one herd of 140 lost 80, and green Texan stock, less hardy than the acclimated cattle, suffered more than others. The rudest shelter would have saved these cattle. With dry coats they will stand even unusual cold, but a cold rain quickly subdues them. The losses of last winter would have paid for substantial shelters which would last many years, and prairie sods and coarse hay, with a few poles, would cheaply furnish such shelters. We have frequently spoken of the necessity for shelters for cattle on the plains, and the moral is so pointedly enforced in this case, that it is to be hoped it will be heeded even now, while there is ample time to make every preparation for the needs of the coming winter. We have heard of cattle being "in lifts" even in the Eastern states the past spring, and this means simply exposure and starvation. Humanity to our stock is a virtue, and a virtue which is its own reward in a pecuniary sense as well as every other way.

Sheep as a Cleansing Crop.

How to clear our pastures of brush and weeds is a very important question in all our grazing districts. As a matter of fact, upon most dairy farms it requires the utmost vigilance and considerable expense annually in cutting brush to keep them clean. The grazing of cows and young cattle alone will not clean the land from brush and weeds. Patches of briars, whortleberry, sweet fern, hazel-nuts, scrub-oak, or other brush spring up, and spread year by year until the grass is crowded out, and the land is covered with a young growth of forest-trees. In many of the older states there are large tracts of land now covered with timber, that forty years ago were in pasture. In the case of rough, hilly land that can never be plowed, this return to forest is often desirable. But a certain portion of every farm is needed for pasture, and if animals can be substituted for human labor in killing brush and weeds, it is exceedingly desirable to know it. We recently visited two farms lying side by side, with no perceptible difference in the quality or moisture of the soil. The pasture lands were only separated by a stone fence, but something much broader than a fence line had separated the management of the two farmers. The one pasture had been grazed by cattle for a long term of years, and the policy had gone to seed in a magnificent growth of alders, whortleberry brush, young maples, vervain, thistles and golden rod, briars and other brush and weeds. There were patches of grass in perhaps one quarter of the field, where the cows got a scanty living. The other pasture, in addition to its cattle, had the constant tread of a flock of one hundred and sixty sheep, and their hoofs in this case certainly had been gold. Besides all the wool, mutton, and lambs sold from the flock, they had paid for their keeping every year in free-

ing the pasture of brush and coarse weeds, and in enriching it with their manure. There was no brush of any considerable size, and very few weeds. And we learned from the proprietor that sheep were the only agents employed in keeping the field clean. They had nibbled the young shoots every year as they started, and what they had not killed outright by this cropping they had kept even with the grass. There was good feed in every part of this pasture, even late in the fall, and the owner of this farm used this contrast between these adjoining pastures as a standing argument in favor of sheep husbandry. It was very much to the point. If it is true, as George Geddes asserts, that sheep in certain proportion to cattle pay their way in a pasture naturally clean, they must pay much better in pastures inclined to produce brush and weeds. We have had occasion to notice the beneficial effects of the grazing of sheep upon another farm that has been under observation several years. They have not only subdued sweet fern, briars, and thistles, but have greatly improved the grasses. The sod is much thicker and heavier, and the white clover has come in where once it made no show at all. In pastures where the brush is already strong, and higher than the sheep can reach, it can not be expected that they will conquer. But if the brush be cut for a season or two, and the sheep turned in sufficient numbers upon the young growth, they will keep it under and eventually destroy it. This is much cheaper than the use of the scythe and plow perpetually.

Sale of Shorthorns.

The popularity of Shorthorn stock is well sustained. Although we can not expect to see the excitement which attended the sale of Mr. Campbell's Duchesses repeated within a generation, yet the recent sale of Mr. Coffin's herd at Muirkirk, near Baltimore, shows that, as a matter of mere business, a sale of excellent stock will attract buyers from all parts of the country, and that good stock retains its full value. The herd consisted of forty-two cows and heifers and twelve bulls, which were descended from the best families of both the Booth and Bates' strains. The average of the sale was $640 per head. $1,425 was the highest price paid for a cow, Muirkirk Gwynne, a three-year old roan, which goes to Kentucky, as do also eleven others of the best animals. The sale of part of the Glen Flora herd at Waukegan, Ill., on May 20th, was also well attended. Seventy-eight head were disposed of for $55,000. The highest price for a cow, $2,500, was paid by Mrs. Dunlop, of Jacksonville, for Jubilee Gwynne. Eight cows of this favorite family of the Gwynnes brought $8,300. The average price per cow at this sale was $900. Mr. C. C. Parks, the owner of the Glen Flora herd, still retains sixty head of the choicest animals. At the sale of General Meredith's stock at Cambridge city, Indiana, on May 22d, fifty head brought $25,000. The highest price paid for cows was $2,000, by T. C. Jones, of Delaware, Ohio, for Royal Duchess, and Avery and Murphy, of Detroit, Mich., for Joan of Arc.

On May 21st, the Lyndale herd of Mr. W. S. King, of Minneapolis, Minn., was disposed of. There were fifty-eight cows and heifers and twenty-one bulls, sold for a total amount of $101,615 for the cows and heifers, and $25,375 for the bulls. The average prices were thus $1,752 and $1,200 respectively. The highest prices were for a pair of twin heifers, Lady Mary 7th and 8th, $11,000, and for a bull, 2d Duke of Hillhurst, $14,000. This last price is the highest ever yet paid for a bull; and thus those who fancied that the prices paid at Mr. Campbell's sale would never again be reached, have proved to be mistaken. Indeed, considering the well-deserved popularity of the best families of Shorthorns, and the high excellence and intrinsic value of this class of stock generally, it is unsafe to predict that present prices may not be far outreached in the future.

HERD-BOOKS.—Of making many herd-books there is no end. For every breed of horned stock we have a herd-book, and the fact that this is necessary only goes to show that stock-breeders are very much like others, herd-books being neither more nor less than a method of guaranteeing the purchaser, to some extent, against imposition. But when herd-books for swine, for sheep, and now for poultry are proposed, it is time to ask for what good purpose are they needed. For cattle, which do not very rapidly increase, and whose identity is easily determined, it is desirable to have the safeguard of a herd-book, provided it be only thoroughly well and honestly managed. But for animals which reproduce so rapidly and the identity of which it is so impossible to preserve as that of pigs, sheep, or fowls, herd-books seem to us not only useless but impracticable and absurd.

Roads and Road-Making.

It has been said that the civilization of a people is measured by the condition of their roads. If we should judge ourselves by this test, at least so far as our wagon roads are concerned, we must admit that we are somewhat behind the general standard of civilization. But the prevalence of railroads has greatly diminished the importance of other roads, and made them but secondary means of communication instead of primary ones, as they formerly were. Nevertheless we can not ignore the fact that the usual bad condition of our country wagon roads is a serious tax upon the agricultural interest. A badly-made road is expensive to keep in repair, and one which costs only $1,000 a mile to construct at the outset will have cost in the course of ten years a sum which would have paid for an excellent road upon which very few repairs would have been necessary. Again, a bad road, built for $1,000 a mile, is more costly to use than one on which three or four times as much has been expended in making it, because a farmer who draws loads to market upon the one can only carry a third or a quarter as much as upon the other, and to move this reduced load requires double the time that the larger load would on a good road. There is hardly a question that any community can better afford to build a level, solid, smooth, stone road at a cost of $6,000 or $8,000 a mile, and maintain it in good order at a merely nominal annual cost for forty or fifty years, than to build an uneven, rough, soft, earth road at a cost of $1,000 a mile, and keep it in barely passable condition for the same number of years at the necessary high annual cost. This leaves out of calculation the loss of time, team power, and wear of wagons, horse-shoes, and harness which is inflicted upon every traveler who uses the road.

All this shows the importance of laying out roads of easy grades, and passing around hills instead of over them, and of making the surface hard, smooth, and durable. Probably one of the best county roads in the country is one now in course of building by the Telford Pavement Company of Orange, N. J. Some time ago we had an opportunity of inspecting this method of road-making, and here describe it, with the machinery used both in preparing the material and finishing the road-bed. The road-bed is first excavated, graded, and properly formed to a depth of fourteen inches from the level of the gutters; this cross section is made to conform in every respect to the cross section of the pavement when finished. It is then thoroughly and repeatedly rolled with the steam roller, all depressions which may appear being carefully filled and rolled before the stone is put on. On the road-bed thus formed and consolidated a bottom course or layer of stones of an average depth of eight inches is set by hand, in the form of a close, firm pavement, and thoroughly rammed or settled in place with sledge-hammers, all irregularities of surface being broken off and the interstices carefully wedged with pieces of stone. An intermediate layer of broken stone, of a size not exceeding three inches in diameter, is then evenly spread thereon, to the depth of four inches, and thoroughly rolled, after which a half an inch of sand is applied and rolled in. The surface layer of broken stone, of a size not exceeding two and a half inches in diameter, is then put on to a depth of four inches, thoroughly rolled, and a half an inch of sand applied and rolled in as before. Care is taken to so spread the stones that the total depth when finished shall be uniformly not less than fourteen inches, and that the grade and cross section of the pavement may be perfect when thoroughly consolidated. A binding composed of clean sharp sand, or of the screenings of the broken stone, is then applied, well saturated with water, and thoroughly and repeatedly rolled with the steam roller until the surface becomes firm, compact, and smooth, when all superfluous binding material is swept off and removed.

The steam roller weighs not less than fifteen gross tons, and is so constructed that its compressive force on the roadway being rolled shall not be less than 450 lbs. per inch run.

The cost of a road thus prepared is $1.00 per square yard for nine inches in depth of stone, and $1.50 per square yard for twelve inches in depth. A road five yards wide, of the former description, would thus cost $8,800 per mile. A road like this would be of such a permanent character as to require very little repair for many years, and could be kept in good order at a very small annual expense. In some parts of the country the citizens have already found it a measure of economy to raise money by bonds to make roads of this character, the annual saving in cost of repairs being sufficient to pay the interest upon and provide a sinking fund for the final payment of the bonds, when the road will practically have cost the township nothing as compared with the former poor roads.

The road material is rock. The best rock is hard trap; the next best is crystalline limestone; but the ordinary "hard-heads" or boulders, so common in many places, when broken, furnish one of the best materials. The soft

limestone common in much of the western country will make an excellent road, but will need more frequent renewal, the cost of which, however, is but a small item compared with that of the foundation. Neither is it necessary in all cases to be at so great a cost for the preparation of the bed. A very fair road may be made without excavating the foundation, and a large portion of the cost saved. If the rock is to be blasted from a ledge, the compressed air-drill or a percussion steam-drill is used. The drill shown in figure 1 is the Waring compressed air-drill, which is capable of making 1,000 strokes per minute and of boring in any ordinary rock with great rapidity. In the employment of drills of this character a large amount of time and labor is saved. The rock is broken by a Blake stone-crusher, which powerful machine (shown in figure 2) reduces the hardest rock to fragments of the required size. The broken rock is then hauled and spread upon the road to the proper depth, when the steam roller compresses it with great force into a solid mass which binds together with great compactness. A certain portion of sand or fine stone screenings adds greatly to the binding together of the stone.

Fig. 1.—WARING'S ROCK-DRILL.

Fig. 2.—STONE-BREAKING MACHINE.

The steam roller is shown in figure 3. It is a road locomotive which has a double set of wheels, one for ordinary draft purposes, and one of greater weight and width used only for rolling and compressing the road. It is made by the Messrs. Aveling & Porter, of Rochester, England, but is imported and sold by their agent in this country, where it is already in somewhat extensive use. One of these engines has drawn eleven two-horse wagons loaded with stone upon an ordinary country road up a grade of one foot in fifteen. An engine weighing eight tons has a compressive force upon the road of 270 lbs. to an inch of bearing surface, and uses 400 lbs. of coal per day. The total cost of working is about $6 a day, and the cost of the engine with a set of four furrow plows for preparing the foundation or for field plowing is about $4,000. An engine of this weight is twelve-horse actual power, and may be used for threshing or any other purpose to which a locomotive engine is suitable. This general availability renders it of such service that its cost is within the means of almost any township in the country or of any agricultural association. Some of our agricultural societies could, by putting these machines in use, help to solve the question of the usefulness of steam cultivation, and also that of how we can have durable roads.

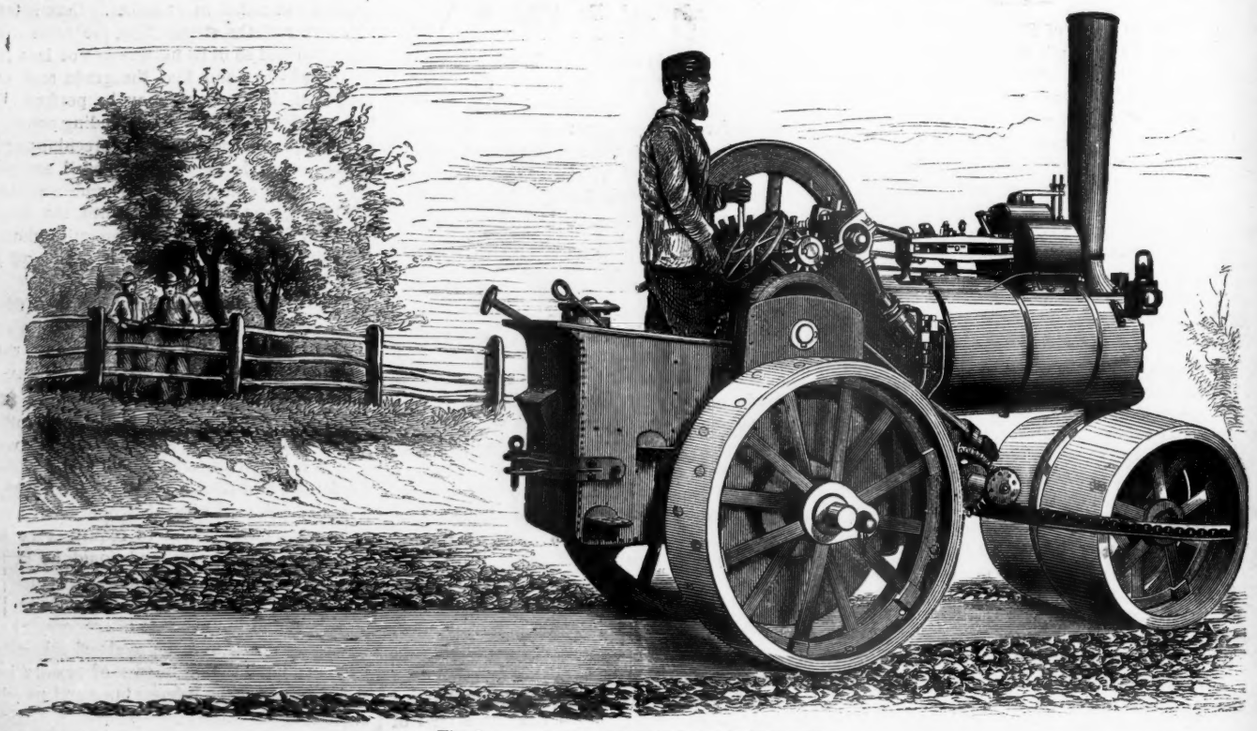


Fig. 3.—AVELING & PORTER'S ROAD LOCOMOTIVE.

Long Moss—Tillandsia.

To the traveler in the Southern States no natural object is likely to be more striking than the Long Moss, which from North Carolina to Texas drapes the trees of all kinds, but is especially abundant upon those which grow in damp situations. This moss is sometimes found only here and there in small tufts, but frequently it is in such quantities upon a tree as to appear to fill all the spaces between its branches, and from the lower limbs it hangs in pendent tufts several feet in length, which as they are swayed by the wind wave with a certain grace. In localities where the moss is very abundant, its dull gray color and general drooping habit produce a very somber effect. As it grows most luxuriantly in situations which from being constantly moist are unhealthy, it is easy to associate it with disease and death, and in some localities it bears the not very cheerful name of "Coffin Fringe." Though popularly called moss, it does not belong to the proper mosses at all, but, strange as it may seem, to the Pineapple Family, the *Bromeliaceæ*. Its botanical name is *Tillandsia usneoides*. The genus was named in honor of a Russian professor, Tillands, and its specific name means, resembling *Usnea*, a long drooping lichen which hangs from Northern trees in a similar manner. Including this there are eight species of Tillandsia in the United States, this being the only slender pendulous one; some of the others have broad, pineapple-like leaves, two feet or more long, with their bases dilated so as to hold water. All the Tillandsias are epiphytes—*i. e.*, they grow upon other plants, mostly upon the branches and trunks of trees, but they are not parasites, as they desire no nutriment from the plant to which they are attached; this merely serves them as a resting-place, and they are nourished entirely by what the air and the rains bring to them. Some of the South American and West Indian species are valued as ornamental hot-house plants, and are usually grown in pots of sphagnum, a condition which approaches nearly to their natural one. Indeed, our Southern species are some of them quite handsome, especially *T. bracteata*, the bright red stems of which bear small purple flowers. The species under consideration, *T. usneoides*, is, as just stated, of a very different habit from the others; its long, branching stems are so slender as to be almost thread-like.

Several years ago we wished, in answer to some questions, to give a figure of this plant. Having herbarium specimens, we supposed that with these and the aid of an engraving of the flower we could easily present an illustration of it; but much to our surprise we discovered that the only engraving of this very common and useful plant was to be found in a work published in Paris in 1823—and not accessible. We then attempted to procure living materials for an engraving, and wrote to several correspondents in the Southern States to send us the plant *in flower*. We received abundant specimens with the remains of seed-pods, which were no doubt mistaken for flowers, but only this spring have we been able to procure the flower. Our correspondent, Dr. H. G. Lungren, of Volusia Co., Fla., sent us flowering specimens, and though the flowers he packed all faded, an abundance of others opened when the plant was placed in the greenhouse, and we are thus enabled to give an engraving of the plant in flower. We mention these matters to show the difficulties which sometimes attend the illustration of a very common plant.

The slender stems produce leaves at intervals of about three inches, which are narrow, recurved, and from two to three inches long; from the axil of each a branch is produced,

LONG MOSS.—(*Tillandsia usneoides.*)

which may be terminated by a flower or be much prolonged to form a part of the tangled mass of stems of which each plant consists The plant presents one peculiarity of which we find no mention in any of the descriptions: each internode, or space of the stem between two leaves, in the young stems at least, forms an open graceful spiral of about two turns, which adds much to the beauty of the plant, when its stems are separated and allowed to grow singly. Both stem and leaves present a uniform gray color, which while the plant is growing has a greenish tinge; an examination with a glass shows the stem and leaves to be of a light apple green, but completely covered with small, almost transparent, overlapping scales, which give the silvery gray appearance. The epidermis is readily separated from the central portion of the stem, which is tough, and resembles horsehair in size and appearance. The solitary flowers are borne at the ends of the branches; they have a three-parted calyx and a corolla of three petals, which, though not more than a fourth of an inch across, is exceedingly interesting from being of a bright gamboge green color. The pod is about an inch long, and splits up in such a manner that it looks very much like a withered flower; this, together with the small size and unusual color of the proper flower, has no doubt troubled unbotanical observers who have endeavored to furnish us with flowering specimens.

Aside from forming a striking feature in the landscape, the Long Moss is of no little economical importance. The central portion, exceedingly tenacious and elastic, has long been employed as a substitute for hair. The plant is found in Central and South America and the West Indies, and has been put to so many uses by the Spanish Americans that in some localities it is known as "Spanish Moss." The primitive method of procuring the fiber is to place the moss in shallow ponds exposed to the sun to rot the somewhat fleshy outer covering; it is then taken out and allowed to dry, after which a moderate beating removes the outer portion, and the fiber is left in a black, tangled mass, which but for its branching character it would be difficult to distinguish from hair. We learn that since the war several establishments have been erected for the preparation of the moss in a more rapid manner. The moss is placed in large tanks, where it undergoes maceration by heat, and after drying is beaten by machinery; this is said to afford a superior product. By itself it forms an excellent stuffing for mattresses, chairs, and the like, and is probably largely used to mix with hair; it forms a considerable article of commerce, and its domestic uses are numerous. In Texas we have seen it twisted and woven into a coarse matting to serve as a saddle blanket, and have also seen horse-collars woven of the same material. It is said to be capable of forming excellent ropes and cables, and we have recently seen a newspaper announcement of the formation of a company to manufacture these articles from the tough fibres of the Long Moss.

Apple-Tree Borer.—We have followed this insect with a sharp wire for over thirty years, and if there is any better remedy for the creature after he has begun to throw out his chips, we have not discovered it. With a sharp-pointed knife and a bit of wire a few inches long, it is not a very difficult task to dislodge the enemy. He should be attacked as soon as he makes his appearance. Young apple-trees should be examined at least twice a year. The sooner the borers are destroyed, the smaller the wounds that will be made around the collar of the tree. Generally the worm can be reached with the point of the knife. If this can not be done, follow him with wire. As a preventive, we have found oil-cloth, or

stiff, thick paper to answer a good purpose. Remove the earth an inch or two around the collar, then bind on the cloth or paper with a string. We have seen fine, thrifty young apple-trees, worth five dollars apiece, destroyed for the want of a half hour's attention in the spring.

The European Daisy.

The Daisy is a plant so commonly referred to in English poetry and literature that it seems a great pity that it should be of difficult cultivation in this country. There are many who suppose our common Ox-eye Daisy or White-weed to be the same as the plant so frequently referred to by European writers. Two plants of the same family can hardly be more unlike than the Ox-eye Daisy (*Leucanthemum vulgare*) of our meadows and the European or English Daisy (*Bellis perennis*), which while it often appears as a weed in English lawns, is nevertheless in its cultivated forms a charming flower. In its wild state the proper Daisy has a yellow disk or center surrounded with white or pinkish ray florets, but in cultivation the disk disappears, the florets are all like those of the ray. There are two obstacles to its general cultivation in this country: our summers are too hot and our winters are too cold for it, and it, like the Polyanthus, Auricula, and similar plants, can only be successfully grown by treating it as a frame plant and giving it protection from extremes of temperature. Considerable quantities are sold in our city markets every spring, in pots, and forced into early flower. These are especially attractive to English and other Europeans, who gladly purchase a plant that reminds them of home, but their purchases, if the plants are set in the open ground, can only result in disappointment. The Daisy is readily raised from seed, which will give a portion of double flowers. The seeds should be sown in a slight heat, and the young plants potted off and kept in a shaded frame in summer, and in winter be plunged in coal-ashes in the frame and kept from severe frosts. It is easily multiplied by division of the clumps. One form of the plant, known as the "Hen and Chickens," has the flower-head surrounded by a ring of smaller heads which are produced from just beneath it. Within a few years several choice varieties have been produced, which in England play an important part in the decoration of borders in spring; there is a great variety in the size of the flowers, as well as in their colors, which range from pure white to bright crimson; besides this there are some with the foliage handsomely marked with spots, like the leaves of Aucuba, and are called Aucubæfolia, there being both white and red flowered kinds with marked leaves. One of the finest daisies we have ever seen was left at our office in April last by Mr. J. T. Lovett, who is with A. Hance & Sons, nurserymen and florists, Red Bank, N. J. This was received from England as "Queen Victoria," and is truly a queen among daisies. It is a strong-growing plant, and a most abundant bloomer, producing flower-heads an inch and a half across. The florets are of a bright carmine on the outside and white within; a part are completely quilled, or tubular, and others are flat, and the contrast between the two surfaces produces a pleasing variegation. If we can not enjoy the daisies as hardy border plants, there are some, such as the one referred to, eminently worthy of being cultivated for greenhouse decoration.

How to Propagate Roses from Cuttings.

BY W. F. MASSEY, CHESTERTOWN, MD.

[There is no plant that the amateur more desires to propagate than the rose, and there is none with which he more frequently fails. The majority of roses offered for sale by florists are propagated in spring from cuttings taken from potted plants which are started into growth for the purpose. Another method is to take off cuttings of ripened wood in October and set them in a frame where they will be protected from severe cold weather; by spring the majority of the cuttings will be found to be callused, if not rooted. The method given in the following article is not generally known, and will be acceptable to many. The author is of the firm of Massey & Hudson, Chestertown, Md., who make a specialty of furnishing roses at cheap rates. They this spring sent us some specimens of the stock they grow in the manner here described, and we have seen no finer and more healthy young roses from any place.—ED.]

The best time to commence the propagation of Roses, especially the everblooming sorts, is about the last of August. The best cuttings are taken from plants which have been grown in beds under shaded glass during the summer, but if the weather is moist, and the plants out of doors are in a vigorous state of growth, as good cuttings can be procured from the open border as from plants under glass.

Prepare a bed of clean, coarse sand, not less than four inches deep, either on the benches of a greenhouse or in a cold-frame out of doors. The cuttings will do as well in the one place as the other, but if a greenhouse is available the bed will be more convenient to work at. This sand bed is then to be soaked with water, and never afterward allowed to get dry. For cuttings, select shoots not more than a week or so old. The slender, wiry shoots of the monthly roses which just begin to show a blossom bud are the best. Avoid the rank, pithy young shoots which frequently sprout from the base of the bushes; these will root, but not so readily as the more slender shoots, nor do they make so good plants. Cut off the soft tip of the shoot, and divide the remainder into cuttings of not less than two eyes. The top of the cutting should be cut at least three fourths of an inch above an eye, and the leaf at this eye should remain on; the base of the cutting should be about a half inch below the second or third eye, the leaves from which should be stripped off. If the wood buds in the axils of the leaves on the lower part of the shoot are fully developed, it is an indication that the wood at that point is too ripe to take root easily, and should not be used unless cuttings are very scarce. In short, the cuttings must not be so soft as to present no woody fiber in cutting, neither must the wood be hard; a little experience will soon indicate to a close observer the exact state which is best.

Having your cuttings all prepared and your sand bed ready, take an old knife or a piece of hoop iron and, using a lath or other straight edge as a ruler, cut a line at the end of the bed across the sand, going completely to the bottom. In this line or groove set the cuttings nearly up to the leaf at the top and about half an inch from each other in the row. Turn the leaves of the cuttings all in one direction, so as to be out of the way in setting the next row, and also to present a neat appearance. When the first row is filled, press the sand tightly toward the row, and about three inches from this first make a second row and fill it in with cuttings in the same manner, turning all the leaves toward the first row. Proceed in this way until the bed is filled or your cuttings exhausted, then sprinkle the bed thoroughly with clear water. The glass over the bed must be shaded with a thick coat of whitewash, and the house or frame kept quite close. If in a cold-frame, the sashes may be slipped down an inch or so at the top during the heat of the day. The frames should slope north, and not south as usual. If the bed is in a greenhouse there should not be any ventilation given overhead; a little air from the doors or side ventilators is sufficient. If the thermometer rises during the day to 100° or over, it will not hurt if the bed is kept watered and the house moist and shady. The cuttings will be rooted sufficiently to pot in about four weeks, and the process of propagation may be continued as late as good cuttings can be had from the open ground, provided some means is at hand for heating the bed when the weather grows colder. When rooted, pot off into 2½-inch pots, using decomposed sods and woods-mold in about equal parts with a very small portion of well-rotted manure. Water thoroughly and keep shaded until they start to grow. When well established in the pots, plunge them in a cold-frame or pit for the winter and protect from freezing. In spring plant out where they are intended to flower. If wanted for sale in spring, shift them into three-inch pots in January and place them in a greenhouse where the night temperature does not exceed 50°, and by the last of April most of the everblooming sorts will show flowers and make fine plants for the market.

This method of propagation is more especially applicable to the tender varieties such as Teas, Noisettes, Bengal, and Bourbon, as the wood of these sorts is usually in the proper condition in autumn, but any roses can be rooted in the same way if shoots can be had of the proper age. During the past fall the writer has propagated thousands of Moss roses in this way, which he was enabled to do by the favorable weather which kept the plants in vigorous growth. Moss-rose cuttings should be almost as tender as the green shoot of a scarlet geranium. In this condition we never have any difficulty in rooting them. The above method can be used by almost any one, while the propagation of roses during winter and spring can only be practiced by florists who have houses adapted to the purpose.

About Pickles.

A farmer sees that a jar of pickles sells at the village store for fifty cents; he knows that he can raise the quart of cucumbers it contains for a very few cents, and estimating the cost of vinegar, bottle, and putting up at a liberal figure, he finds that there must be to some one at least thirty cents profit upon each jar that is sold. He thinks here is a chance for a profitable undertaking; he has the land and knows he can raise the cucumbers, which in his eyes is the main thing, and he writes to his agricultural paper to know all about putting up such pickles as are sold in the stores. The fact is that the cucumbers, while they are the principal thing to the consumer, are but a small part of the investment of the pickle-maker. It is probable that if one of our farmer friends who have an idea of pickle-making could have bottles, vinegar, and all other necessary materials

placed on his farm free of cost, he would make a very poor business of it; he might sell a few at the stores where he traded, but he would meet with no general sale. The person who put up the pickles he saw at the store has been for years in building up a reputation, so that his name upon an article sells it at once; then he has his factory at a commercial center from which radiate the channels through which merchandise passes out to the consumer. He has sufficient capital to allow him to carry a whole year's stock, and buildings large enough to contain it, and the sum invested in cucumbers and other vegetables to be pickled is but a small share of the whole. In this as in many other cases, it is not easy for the producer of the raw material to manufacture it for market. While we would encourage every one to do that which will make his farm more productive, we do not think that pickle-making or fruit-canning can as a general thing be made profitable on ordinary farms, on account of the capital and skilled labor required. In fact the production of the raw material, and the preparing of it as a finished product for market, are two distinct kinds of business, either of which requires the whole energies of the person who engages in it. The growing of cucumbers forms a legitimate part of a farmer's or gardener's business, and when he is within easy reach of a factory where he can deliver his cucumbers fresh, or is able to put them up in salt for the market, it is often a profitable one. Any good land will produce a crop of pickles, but the hills must be enriched with fine manure. Mark out the land about five feet each way and at the intersections spade in a shovelful of manure to mix it well with the soil. The seed is usually put in the last week in June or the first week in July. Where small pickles are in demand the Early Cluster will give the best results; if large ones are wanted, the White Spine may be sown. The Long Green Prickly, while it produces a fruit long in proportion to its thickness, is such a poor bearer that growers generally discard it. Indeed those who make a specialty of this crop raise their own seeds and are very particular in the selection of the plants to furnish them. By careful selection for a few years each grower establishes a strain which he thinks better than any other and of which he is very choice. An abundance of seed is sown in each hill to guard against accidents; although insects do not so trouble the young to the extent that they do earlier, it is well to have air-slaked lime at hand to check them in case they are destructive. The ground is to be kept clean by the use of the cultivator and hoe, and when the plants show two or three rough leaves, thin them to leave three or four of the strongest to the hill. Some growers sow round turnips at the last hoeing and thus get a double crop from the land. In case the cucumbers are supplied to a factory there should be an understanding beforehand as to sizes; the usual size is four inches, but for certain purposes they are required smaller than this. Much of the success of the crop depends upon the picking; if a vine is allowed to ripen the first fruit it sets, it will produce but little after that. There should be force enough to go over the vines every other day, and the pickers should be taught to pick not only the fruit of the required size, but everything that has grown beyond that, in order to keep the plants up to their full productiveness. The cucumbers must always be cut and never pulled, not only for the safety of the vines, but because those with stems are more salable. Picking is usually done by women and children, who are paid by the thousand a price which varies with the locality from twenty-five to forty cents. The pickers should be careful not to tread upon the vines. The delivery at the factory may be made at such times as may be agreed upon, as if not in such large masses as to heat the cucumbers will be in good condition for several days. Those who send their pickles to market salted follow different methods. One of our friends who was formerly largely engaged during the war in supplying the southwestern markets put up his cucumbers in the following manner. New barrels were used, and one head being removed, the barrel was filled as full as possible by shaking, about half a peck of salt added and the head put in place. The barrels were then filled quite full of water through the bunghole, and then bunged up tightly. He stated that as they were sold by the barrel and not by count, it was a profitable business for him. It is probable that in tightly closed barrels the pickles would keep for some months in this weak brine; at that time the article met with a ready sale, and our friend never heard any complaint of their spoiling. Mr. Waldo F. Brown, a well-known Ohio seed-grower, in his "Farm Quarterly" for April gives his method of salting cucumbers as follows: "Cover the bottom of your barrel with salt, then pour in a bushel of pickles, then sprinkle three or four quarts of salt, and so on till the barrel is full. In twenty-four hours you will find the barrel only two thirds full, and the brine at the top of the pickles; then fill again, and perhaps a third time, and when full put on a loose-fitting cover and a weight to keep it under brine, and nothing more is necessary except to see that the brine does not settle so as to leave them bare, in which case make strong brine and refill. Many make brine and pour over them; but by my plan nearly one third more pickles can be put in the same space, and I think the pickles are better for drawing the juice out of them, and if salt enough is used they will keep indefinitely. I have kept them over the second summer in fine condition. A forty-gallon barrel will hold about three thousand pickles, if salted as I direct, and with a little experience a man can count and pack four thousand an hour."

Ferns and Fern Collecting.

Taken as a whole, few plants present a greater variety of graceful outlines than do our native ferns. Those who go from cities for their summer vacation are quite sure to be attracted by the ferns, and as they have seen other ferns cultivated in cases and in greenhouses, they set to work to gather the roots of these to take home for the decoration of their rooms during winter. Ladies, and sometimes gentlemen too, make excursions to the hills and valleys in search of these plants; the roots are carefully placed in boxes and watered and shaded until the time for the return, and on the journey home the parcels are taken by the collector's own hand, as something too precious to be risked with the baggage. At length the plants find their place in the fernery, and are watched with much interest. They perhaps do not look very well, but that may be on account of the journey. As cool weather comes on the ferns look worse, and are given more heat. A still worse condition suggests that they should be kept cooler, or have more air, or more or less light; but with all the changes they go backward, and by Christmas the probabilities are that not a green frond is to be seen. This want of success is ascribed to improper soil, too much or too little water, or to any cause but the right one—a want of knowledge of the plants themselves. The fact is that the great majority of our ferns are deciduous, and when taken home at the end of summer no treatment whatever will make them flourish; they have completed their career, and must have rest until the next season. These deciduous ferns, graceful and delicate as they are, will not answer for house-culture; we have a few evergreen ones, readily distinguished by the firmness and persistence of their fronds, which will do admirably; but with the exception of these, if we would fill up a fernery, we must depend upon the exotic species furnished by the florists. Still we would not discourage the collecting of native ferns; for much enjoyment may be had from their cultivation, only it must be for the most part out-doors rather than in the house. There are but few city yards that do not furnish a shady corner which will allow of a small fernery, and some stones should be arranged to form a little rock-work on which many kinds will grow that would not flourish in the border. Some ferns seem to need the protection the stones afford to their roots. Upon such a small scale no very picturesque rock-work can be achieved; the best that can be done is to imitate some rocky hill-side with crevices between the rocks which are filled with earth, which extends down to and is in connection with the soil of the border. This precaution must be observed in making a rock-work of any kind, large or small, for ferns or any other plants, for if the earth is in mere pockets it will soon dry out, and as no supply of moisture can come up from below the plants will in a dry time be sure to perish. To those fond of ferns there is every encouragement for them to attempt their cultivation in the manner here stated, and we have seen several ferneries in city yards which possessed much interest, the plants having been accumulated during successive summer excursions. In collecting ferns, it would be better to remove them in early spring, just as they are starting into vegetation. But while this is practicable to those who live in the country, those who live in cities must take them just as they are in the height of their growth or not at all. In this case, the best thing to do, after having secured a good clump of roots, is to cut away all the fronds, provided the plant is one of the large kind. If considerable time must elapse between the time of gathering the plants and that of taking them home, it will be best to set them closely together in a box in which some woods-earth has been placed. Put the plants in a shady place, and sprinkle as often as may be needed to prevent them from drying out, yet they should not be too wet at the roots. In setting the ferns out, as near an approach as possible should be made to the natural localities of the plants. Those found upon rocks should have a place on the rock-work; those that were collected along the edges of thickets and by roadsides will make themselves at home in the border; and the "Ostrich Fern," which grows in rich, moist soils, and the "Flowering Ferns," which come from the margins of swamps, may have a place to which water can be conducted to keep up the proper moisture. The great trouble the town cultivator will encounter will be the soil. Very often that in the yard is of the poorest kind, and mixed with builder's rubbish. For some species it will be absolutely

necessary to have soil that is light, and which contains a large share of vegetable matter—such as is known as woods-earth or leaf-mold. It sometimes happens that a florist will furnish a supply of soil of this kind for a moderate sum, or arrangement can be made with some market gardener to bring in a barrel of the desired material. One who is really in earnest can procure it without great difficulty. We would advise those who collect ferns by all means to learn their name. We have seen a large collection, the result of several years' labor by a lady, who did not know the name of a single one of her ferns, and we could not help thinking how much more she would have enjoyed her pets could she call them by name. In Gray's Manual the ferns of the Northern States are carefully described by Prof. D. C. Eaton, and as one specimen of each genus is so illustrated by engravings that its characteristic parts are distinctly shown, almost any intelligent person can with a little study make out the names of the species he finds.

FOUR-LEAVED MILKWEED.—(*Asclepias quadrifolia.*)

SHRUB YELLOW-ROOT.—(*Zanthorhiza apiifolia.*)

The Four-leaved Milkweed.
(*Asclepias quadrifolia.*)

One or more species of Milkweed is to be found in almost every locality, but the commoner ones which grow along roadsides and in fence-rows have generally a coarse, weedy look. Not so the little four-leaved species of the woods, which is as delicate as the others are coarse. This has a slender stem, one to two feet high, upon which are one or two whorls of four leaves together, and one or two pairs of leaves besides. The stem is terminated by usually two umbels of flowers, which have the structure peculiar to the genus. But few plants present such a striking departure from the ordinary form of the flower as do those of the Milkweeds. Wonderfully curious is the arrangement of the stamens, from which the pollen can only be removed by the help of insects, and singularly beautiful is the crown of cups attached to the stamens, each cup or hood looking like a minute, tinted shell, within which is a slender curved horn; this crown is often the most conspicuous part of the flower. In the present species the hoods are nearly white, delicately tinted with purple at the base. The flower appears in June, and has a most pleasing fragrance. We do not remember to have seen the Four-leaved Milkweed in cultivation; but it is worthy of trial by growers of native plants.

The Shrub Yellow-root.

It is the misfortune of common names as applied to plants that they are very apt to be used loosely. Sometimes the same name is given to widely different plants, and again a plant will have several common names, and the greatest confusion prevails among the common names of our native plants. There are five kinds of "Rattlesnake Root," three things called Checkerberry, while the plants known as "Snake-root" number a dozen or more, hence it should not surprise us to find three or four distinct plants called in different localities "Yellow-root." If those persons who hold in contempt botanical names of plants simply because they are derived from Latin and Greek, could be perplexed as every druggist is almost daily by the indefiniteness of common names, they would gladly adopt the definite botanical ones. To distinguish the Yellow-root in question from the others Dr. Gray very properly gave it the name of Shrub Yellow-root, and as the others bearing this name are herbs this simplifies matters greatly. The botanical name, *Zanthorhiza*, is the rendering of Yellow-root into Greek, and its specific name, *apiifolia*, means parsley-leaved, as the foliage is cut up something after the style of that of "single" parsley. It belongs to the Ranunculus Family, and is interesting as being one of the few members of that large and important family that are shrubs. The plant has long, deep, yellow roots, from which arise several stems, sometimes as high as three feet, but more commonly from one to two. The stems have large terminal buds, from which in spring appear the many-divided leaves and the drooping racemes of small, brownish purple flowers. The general habit of the plant is given in the engraving. The plant is found in Western New York, Pennsylvania, and southward along the mountains. Both root and stem have a very yellow and bitter bark, which was found in use by the aborigines as a dye, which takes readily upon wool and silk. Some years ago it attracted attention as a medicinal plant, but its properties are only those of a simple bitter, and it is not in this respect superior to other and more common tonics or vegetable bitters, which are much alike in their effects. The coloring matter is similar to that of the barberry.

THE HOUSEHOLD.

☞ *(For other Household Items, see "Basket" pages).*

A Clothes-Line Reel.

An Illinois correspondent sends us a sketch of a contrivance for taking in a clothes-line, which he has made, and, finding it to work satisfactorily, he wishes to give it to the readers of the *Agriculturist*. He justly remarks that it is a great deal of trouble to put up and take down an ordinary clothes-line, and it is often left out and exposed to the weather and soon becomes rotten. We regret that his description is not quite so full as it might be, but, as we understand it, it affords a hint to those husbands who like to make things handy for the "women folks," and give his sketches and description. In the first place, he has an upright box, to serve as a post, built of boards; this is shown at *a* in both engravings, figure 1 being a front view

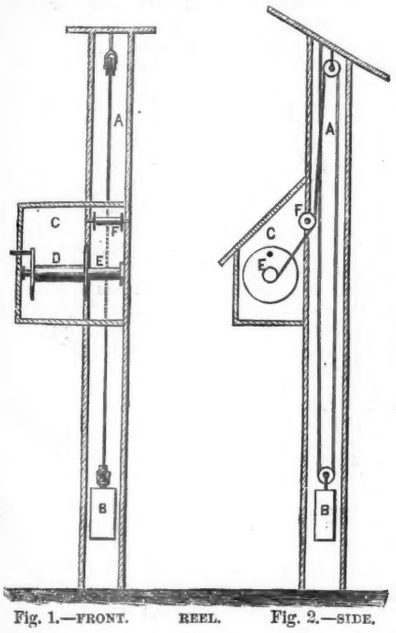


Fig. 1.—FRONT. REEL. Fig. 2.—SIDE.

and figure 2 a side view in section. This box, *a*, is made large enough for the weight, *b*, to move up and down freely inside of it. Attached to this upright box, at the proper hight, is a box, *c*, to contain the reel for the line. The reel is double; it has a large shaft, *d*, upon which the line is wound, and a smaller shaft, *e*, for the cord of the weight. This box is so attached to the upright one that the small shaft, *e*, is opposite to it. The weight has a pulley attached to it; the cord for the weight is fastened to the top of the upright box, goes through the pulley on the weight, over a pulley at the top, and down to the shaft, *e*, of the wheel. When this cord enters the box there is a guide pulley or roller, *f*, to make it run smoothly. When the line is put upon the reel the weight is first wound up by revolving the reel, which will wind the weight cord up upon *e*. The line being made fast to the shaft *d*, the weight is allowed to run down, which will reel up the line upon *d*. There must be an opening in the box, *c*, the length of the shaft, *d*, in order to allow the line to run freely. When the clothes-line is pulled out, of course the weight will be wound up, and when it is to be taken in the descent of the weight will cause the line to be reeled upon its shaft and be properly housed. We give this merely as a suggestion, regretting that our correspondent did not give exact measurement, size of weight, etc., all of which are necessary in explaining such a contrivance.

French Cream-Cake.—Mrs. E. G. B.—Sugar, 1 tea-cupful; flour, 2 tea-cupfuls; milk, ½ tea-cupful; eggs, 3; baking-powder, 1 teaspoonful. Bake like jelly-cake, but have the layers thicker. When done, split open with a sharp knife and place one above another, having the crust down, with mock-cream between each layer made thus: One pint boiling milk, beat well, and stir in 2 eggs, 1 cup of sugar, 2 table-spoonfuls of cornstarch, and lastly add ½ tea-cupful of butter. This cake is better two or three days old. It makes a very nice dessert.

The Atrocity of Feather Beds.

BY A COUNTRY PARSON.

The cackling of the goose is said to have saved Rome. The feathers of the same bird are dealing death to America. We are reminded of this as the summer approaches and the hospitality of rural friends occasionally introduces us to the "feather bed" which has come down an heirloom in the family for five generations. It is a capacious bag, holding some thirty to forty pounds of good, honest goose feathers, plucked a hundred years ago, and held in high esteem by succeeding generations until it has come into the possession of the present incumbent of the old homestead. Underneath this feather bed is the straw bed, filled annually with clean, sweet oat straw. This relieves the pressure upon the bed cords, which are annually tightened at the spring house-cleaning with the old-fashioned winch and pin until the tense cord makes music to the stroke of the hand. This feather bed was a tolerable institution in the days of log houses, with the free ventilation of a big fireplace and rifts in the roof through which the wind whistled and the snow drifted in every winter storm. But now, with tight houses and stoves that heat everything from cellar to garret, the case is altered. No amount of airing and sunlight will permanently redeem the bed from the odor of old feathers, which is anything but agreeable, and the more atrocious effete animal matter that has escaped from the sleepers that have sought repose here for generations past. Think now of John Giles coming in from his day's work in the field where he has been following the plow or driving the mower or reaper, his body all day long in a vapor bath, to repeat the process in the night watches as he stretches his weary limbs upon this unpatented perspirator. Here he tries to sleep, but wakes often from fitful dreams, and tosses as if a fever were raging in his veins. Is it any wonder that he rises from unrefreshing sleep with the early dawn, that he grows lean and cadaverous, and becomes cross and dyspeptic? The poor wife who shares his couch has possibly, in addition to his discomforts, the care of a nursing child. Is it any wonder that she comes to the morning more dead than alive? Is it any wonder that so large a per cent of the inmates of our lunatic asylums come from our farms? The old proverb that "the rest of the laboring man is sweet" needs to be received with several grains of allowance. There is not much sweetness or refreshment on this pile of feathers in the sweltering summer nights. It is surprising to see how long it takes modern improvements to invade the agricultural districts, even with the help of railroads and newspapers. Hair mattresses and spring beds are unknown luxuries in many of these districts where the civilization is at least two hundred years old. "The age of home-spun," supposed by some of our brilliant writers to have departed fifty years ago, is still continued in almost unbroken force. Something cool and soft to sleep on and under, is still a desideratum in most farm-houses. The apology for feather beds and cotton-quilted comfortables is not poverty, but convenience of manufacture. The feathers are a home product, and a tea-drinking makes the quilts and comfortables. Yet John Giles owns his farm, is out of debt, has a good bank account, owns railroad stock, and could have mattresses, fine linen, and blankets if he understood their comfort and economy. Where are our advertisers of good beds and bedding?

Home Topics.

BY FAITH ROCHESTER.

THE CONTENTS OF CHILDREN'S DINNER BASKETS.—I think I will tell a little true story, to begin with—a bit of my own early experience.

I was rather a delicate child, subject to sick headaches and to frequent fits of childish sickness—in the summer fevers, and in winter inflammation of the lungs, cold in the head, *et al.* I got the idea when quite young that I was not expected to make a very healthy woman, and that it would not be strange if I should grow up to be a chronic invalid. It did not occur to me—nor to any one else, so far as I am aware—that this would depend chiefly upon my habits of living during my early years. Though I became a church member at thirteen, I had not the least awakening of conscience in regard to physical sins (or unhealthy habits of eating, dressing, exercise, etc.) until more than five years later, and since then I seem to have been learning only slowly, with pain and difficulty.

When I was twelve years old I was a pupil at a select school more than half a mile from home, and carried my dinner in a small tin pail. I was allowed to put this up for myself, without any supervision from others. A little white "milk emptyings," bread, well spread with butter, went in for decency's sake; all the rest was pie, cake, and pickles. The cake and pickles were my chief dependence.

I used to feel secretly sure that I should soon die of heart disease! My little five-year-old Dot knows more of physiology and hygiene to-day than I did then, though I was getting on well with my algebra and grammar and history, and had just taken a prize for the best composition. I thought it was my heart that pained me so under my ribs after I had eaten the cake and pickles. One afternoon I had to go out of school crying with the pain, and the teacher's wife allowed me to lie on her bed until school was over. Then, instead of walking home, I went to stay all night with my seat-mate, who lived nearer the school. Her mother said it was dyspepsia that troubled me, and that she had it herself. I had heard the name before, and felt rather flattered at having such a respectable disease, and drank the hot tea she prescribed and prepared with an unusual feeling of being in the fashion.

Not long after I took my dinner with me and went home with my seat-mate at noon. I sat nibbling my lunch in the kitchen, where Anna's eldest sister, a young married woman home on a visit, was ironing. I always liked her. She looked into my pail, saying merrily: "I wonder what you carry for your dinner."

"I don't wonder that you have a pain in your side so much!" she exclaimed. "Don't you know that it is the pickles?"

I explained that I had dyspepsia, but she laughed, and told me that I always would have, and worse and worse, as long as I ate such lunches. She counseled me kindly to make the bulk of my dinner of bread and butter or other plain fare. This advice was acted upon in some degree, and I soon found such a connection between pickles and sick headaches and dyspeptic pains, and later between mince-pie and rich cake and the same aches and pains that prudence led me to avoid them. It was not conscience yet.

This experience, like others of the same stripe, has enabled me to realize better the wisdom of the good God in giving us pain and sickness and death as results of disobedience to physical laws. It seems strange that individuals learn the wisdom of obedience so slowly; and very strange that the human race parts with its stupidity in this respect so tardily. Yet all this may not seem slow or strange to us millions of years hence, but only a beautiful part of our Maker's great plan for our full and perfect creation. He might have created us with only instinct, like the brutes, but he gave us reason and freedom to work out our own salvation, physical as well as spiritual.

The dinners of the school children tell steadily upon their growth and welfare and future useful-

ness in the world. Like grown-up people, they use up daily, or waste by exercise of all sorts, by mere bodily combustion too in keeping the body warm with blood, a large portion of the nourishment they get from food. This daily wastage must be made good. Children have not only to repair the daily waste, but to go on building up new bone, new muscle, new brain, as they grow from day to day. Their food should contain nourishment for all parts of the system, and they should have plenty, but they should be accustomed to such plain fare that they can readily stop eating when their hunger is satisfied, and not go on nibbling merely to gratify the palate, thus forming habits of gluttony.

Cake and pastry have but little, and pickles have scarcely a particle of nourishment in them, and they almost invariably do the system positive harm, in greater or less degree, when taken into the stomach. The harm may be so little and the overcoming influences so strong, in the way of out-door exercise and other healthy conditions, that no evil result may be apparent; but all our diseases are caused by violations of hygiene in some respect. We are not always personally responsible for these violations, since our sanitary conditions are not always within our own control, never indeed entirely so; but where we can help ourselves we ought clearly to do so.

LARGE AND SMALL WASHINGS.—There is more than one way to "save washing." There is a right way and a wrong way, and each of these ways includes many details. Of course, I am writing for people of moderate means. Some housekeeping is done "regardless of expense," and regardless of everything but the personal wishes or whims of its directors. "Household" articles on domestic economy are not read or desired in such establishments. But we who have to look after the small arts of living comfortably and healthfully, and at the same time with true economy, must give earnest thought to all departments of our housekeeping.

I know a woman who always used calico night-gowns for herself and children because they would not show dirt like white ones, and could be worn a longer time without washing. But the colored gowns were as much soiled as white ones would have been. White garments can be more thoroughly cleansed, by strong suds, washing fluid, boiling, and bright sunshine, than can colored ones; so I think it a mistake to use colored night-gowns with an idea of saving washing in that way.

This does not exactly apply to the use of gingham or hickory shirts by farmers. A man who works in his shirt sleeves is likely to soil the outside of the garment so very soon that he does well, if he wishes to keep a decent appearance during the days while he must wear the same shirt, to have it made of some material that does not show spots so easily as white cotton, but of fast colors that will bear boiling.

Nor do my remarks about night-gowns apply to children's dresses and aprons. The darlings look "sweet" in white frocks, but I know so much more than I once did about the *cost* of those dainty garments that my admiration is by no means unmingled with distrust. The first cost may be trifling—no more cents per yard than a good gingham or delaine perhaps. But when the little roly-poly is dressed in its spotless gown and turned loose to play— Oh! But you don't turn it loose to play with white dresses on! No, and that is just the pity of it. There is where you are paying altogether too dear for your whistle. You may spend money in vain for medicines in the effort to buy for a pale and puny child the rosy cheeks and bright spirits and cheerful voice and promise of long life which you have sacrificed to its white dresses in the effort to keep them clean.

A mother may resolve that she will eat her cake and have it too—that she will keep her child in clean white dresses and not restrict his healthy rough-and-tumble exercise out of doors and on the floor. Think it over well, loving mother. How many dozen little white garments can you afford to make on your sewing machine each season? How many can you wash and iron weekly? What hours of reading will you give in exchange for these labors of love—the sewing and the laundry work? Can you keep your child in spotless robes and yourself in the cheerful spirits that go along with unstrained nerves and a body not overworked?

Our ideas of beauty have their foundation in some perception of spiritual truth, however dim or poorly conceived. Pure and spotless robes are beautiful, and no one dreams of a heaven without them. I too long for them, and gladly believe that when the kingdom comes on earth good gowns and white robes will belong to everybody's wardrobe. But at present I would not take as a gift the wonderful white gown which my neighbor regards as a great triumph of art. It is so fearfully and wonderfully made, with its ruffles and tucks and puffs and skirt over skirt that no one but its owner can be trusted to iron it. This task takes her just one whole day, she says; and the complicated garment can be worn only a few times before it has to have a fresh washing and ironing.

Neither do I envy the hired girls their ruffled white skirts. Annie would tell me at eleven o'clock that the ironing was all done but a few pieces, and in the middle of the afternoon the kitchen fire would still be raging, while Annie's red face was bowed over the ironing-board, where her own puffs and ruffles on her white skirts were being smoothed. Plain hems for me! And white skirts only with very light colored dresses! And very light dresses only for the leisure hours, and not then if they make me fear to have the children run in from play to hug and kiss me.

Give us plenty of undergarments—separate ones for the day and for the night, so that these may be changed and cleansed as often as once a week at least. But there is a great saving in the labors of the laundry if most outer garments be made of colors and materials which can be worn a long time without showing slight spots or stains, but which can be brushed and aired in the sunshine, and sponged in the places most exposed to soiling.

Colored table-cloths save a good deal of labor, and if large oil-cloth mats or japanned paper trays be slipped under the children's plates the cloths will look clean enough to use a long time, especially if carefully folded in the same creases each time. Folded paper under the children's plates will serve in an emergency. The use of table bibs will save the children's aprons a great deal, and if these are of rubber they need not go into the wash.

What Shall we Have for Breakfast?

BY MISS J. J. O., WOODBOURNE, SULLIVAN CO., N. Y.

Being a farmer's daughter, acquainted both by observation and experience with many needs of farmers and their families, I venture sending a few hints. I esteem no one thing more essential to the success of farmers than that of having breakfast well and promptly prepared, so that they may be able to avail themselves of the early, cool morning for their own work and that of their teams. By proper forethought in making allowance for the next breakfast when cooking the dinner, the accompanying lists can be prepared by any active housekeeper in half an hour. Of course, if potatoes and meats are to be cooked, they must be made ready over-night, coffee ground, etc., to spare the vexation of uncomfortable haste in arranging the breakfast. Coffee is supposed to be served at each meal, that being our usual breakfast beverage, although chocolate, tea, or water may be substituted if desired. The kinds of meat may be varied with the season, to include fowls, fresh fish, veal, mutton, or whatever is procurable or desirable; and similar variations may be made in the fruits. It is sometimes a grateful change in midsummer to leave out meats altogether, and add more fruit, either raw or cooked. Potatoes are mentioned in the lists because it is taken for granted that every farmer has them; but those who relish other vegetables, and give them place in the garden (as every farmer should do), will often exchange them for or supplement them with some of the many other healthful vegetables. No breadstuffs appear in the lists, as it is assumed that bread, buckwheat, graham, or Indian meal cakes will be served each morning according to season or preference.

It has always seemed to me that none have better opportunities for an abundance of good food than farmers, providing their wives and daughters appreciate their position as they should, and will give to the preparation of the meals the amount of thought and care that good cooking requires. I fancy that I hear some hurried, overworked housekeeper saying: "Oh! do not speak of putting out any more work or thought on cooking than we now do." Far be it from me to add to the burdens of the already over-tasked American farmer's household; but permit me to whisper a doubt of our work being always just as well systematized as it might be, and just as much pruned of extra duties. I do not purpose to carry this subject out, as it could easily be, to the extent of an entire volume or more; but I must say that it does not appear to me necessary for even independent, middle-class farmers and their families to seek the adoption of furniture, equipage, and dress indulged in by people of more wealth though less independence than farmers; every mere luxury bringing with it added care. Ah, tired house-mother! Leave the ruffles off the children's clothing, put aside the extra stitches and the extra rubs; prepare a simple, healthful, early breakfast (for starting right in the morning is a good foundation for going through the day right), and let every member of the household have a pleasant memory of the dear old farm, its quiet reunions around the breakfast-table, and a thousand other possible reminiscences of peace and beauty to take with them not only through the toils of present days, but through other years, when they may too truly become only memories to its scattered flock.

BREAKFAST LISTS.—The articles in parentheses refer to different seasons:

SUNDAY.—Baked potatoes; roast beef from previous dinner, set in the oven until hot; stewed apples (pie-plant); rice pudding.

MONDAY.—Potatoes, from previous dinner, cut in slices and heated or warmed over by dropping in hot fat, like crullers; roast pork, cold; cucumber pickles (cut cabbage); raspberries, fresh or canned.

TUESDAY.—Boiled potatoes; salt mackerel; chopped tomato pickle (lettuce); pie, apple (pie-plant or cherry).

WEDNESDAY.—Baked potatoes; broiled beef; tomatoes, canned or fresh; stewed apples (strawberries, cherries, etc.).

THURSDAY.—Codfish, *Agriculturist's* mode of cooking; boiled potatoes; cucumber pickles (martynias, etc.); canned plums (baked pears).

FRIDAY.—Broiled ham and poached eggs; apples, stewed or baked; rice pudding.

SATURDAY.—Potatoes, warmed over by slicing in just water enough to keep from burning, to which add butter and seasoning; broiled steak; chopped tomato pickle; cherries, canned or fresh (blackberries, grapes, etc.).

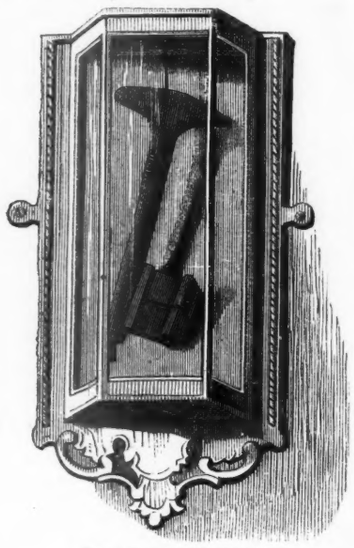
Pudding Sauce.—Mrs. T. H. L. says: "For the benefit of those who do not have milk in plenty, the pudding sauce mentioned in March last can be made very nice by taking the same quantities of sugar and butter, adding water instead of milk, letting it all boil together, and when boiling pour slowly on a well-beaten egg, not putting on the stove again; when nicely thickened by stirring pour into a dish on wine and nutmeg. I use this recipe often."

Lemon Custard.—By Mississippi.—Take four eggs, beat them well; add six table-spoonfuls of sugar, three of butter, half a tea-cupful of rich cream, and juice of two lemons. Beat all the ingredients well together, and pour on crusts and bake. This quantity will make three ordinary-sized custards.

BOYS & GIRLS' COLUMNS.

The Key of the Bastile.

It is likely that every boy and girl old enough to read knows that Mount Vernon is the name of the estate where Washington formerly lived; it was here that he died and was buried. This place, which is upon the Potomac River, a few miles below Washington, is visited by many persons who wish to see the place where the great general and our first President lived, and the spot where he is buried. The house is kept in very much the same condition that it was in Washington's lifetime, and



KEY OF THE BASTILE.

the rooms he occupied and the furniture he used are shown to visitors. Among the objects shown is a large key in a glass case, which was sent by Lafayette to Washington—the key of the Bastile. How many of you know what the Bastile is, or rather was? In French it is spelled with two l's, and is the general name for a fortress, but was especially applied to a large fortress in Paris, which was begun as long ago as 1639, and afterwards much enlarged. It was an immense stone building, with towers and a great ditch running all around it, and had numerous cells in the towers, as well as horrible dungeons below ground. This place was for a long time used for the keeping of state prisoners. Princes and others who were supposed to be dangerous to the government were put away here where they could do no mischief. After a while it became a common jail, and great numbers of persons suspected of being opposed to the rulers were confined here. When you read the history of France you will find that the Bastile plays an important part, and that many distinguished persons were imprisoned here, and went from it to be executed for their political belief. There is no sadder page in all history than that of which the Bastile is the center, and perhaps you will sometime read all about it, and learn how the passions and prejudices of people led them to do wicked deeds. For a long time the very name of the Bastile was a terror. During one of the French revolutions, in July, 1789, the people destroyed the famous prison; the guards made but a feeble defence, and the people rushed in, liberated the prisoners, some of whom had been there many years, and one had been confined there since he was eleven years old. The people toppled the towers down into the ditch and underground dungeons, and the whole fortress was completely destroyed. Upon the place where this famous prison formerly stood there is now a monument erected to the memory of the patriots who fell at that time, which is called the Column of July. Lafayette, who was as you know a great friend of Washington, and who was always a patriot, sent to him the key of the terrible prison, as a memento of the triumph of the people over their wicked rulers, and the key can be seen by all who visit Mount Vernon.

Mr. Crandall's Acrobats.

Mr. Crandall has probably done more to amuse young people than any other living man. Some of you who are old enough to read, and doubt whether you are to be still classed among the boys and girls, but think you are almost young men and women, can remember when his building-blocks first came. What a treasure those building-blocks were, for the things that can be made of them are numberless, and then, unlike all other blocks, the houses and other structures made of them hold together. These blocks have gone all over the country and to far-off countries; for children in Australia and South America are just like other children in wanting to be amused, and fathers and mothers everywhere wish to amuse the children, and it would surprise you to know how many far-off places have sent for the blocks. The loads upon loads that have been sent to different parts of this country, if you could see them altogether, would make a tremendous pile. But Mr. Crandall was not satisfied with his success with the blocks, and away up in his home in the mountains he has been contriving other things to amuse children; he has sent out blocks of various kinds, but at last he has hit upon something new—his Acrobats. Hurrah for the Acrobats! for they are just the funniest things ever made. But stop. What is an acrobat? That question would puzzle more than one old person, and the children might as well know that it comes from a long Greek word meaning to walk on tiptoe; it was first applied by the French to rope-dancers, and has since been used for persons who perform gymnastic feats of any kind. As Mr. Crandall's toys can be made to do almost any ridiculous thing, he has called them "Acrobats," and it is just as good a name as any other. There are four acrobats in a box, and each one consists of a body, a head, two arms, and two legs. All these parts are so grooved and notched that they can be put together to suit the child's fancy. They go together much as the blocks do, and, like them when put together, they hold. Then there are long and short grooved strips in each box, which allow the acrobats to be set up in all sorts of ways. When Mr. Crandall sent his first sample box, you ought to have seen how a lot of old "boys" amused themselves with it. Men who are grandfathers took the greatest delight in putting these figures together in strange shapes, and then laughing at them just as children would. Well, that is right; a man should never forget that he was a child once, and probably each one was laughing to think how his children would be pleased. Did not the figures illustrating these Acrobats take up so much room we would show them here, but the publishers, who have the sale of this, the best toy of the century, give the whole thing in the advertising pages, and we advise you to turn to them and learn more about these funny acrobats from the engravings than a long description could tell. We think the boys and girls should hold Mr. Crandall in their esteem as only next to St. Nicholas.

Sunrise.—Bas-relief.

In our mention of the picture called "Sunrise," given last month, we just had room at the bottom of the page to say that it was from a "beautiful bas-relief," and promise to tell more about it. Probably some were puzzled to know what a bas-relief was, and others must have wondered why the little girl had such strange eyes. Yet perhaps the eyes, if nothing else, led them to think that the picture was copied from a piece of sculpture in marble. This was really the case. One of our artists saw this marble work, and being pleased with it he made a copy of it. Besides the figures which stand by themselves, such as the statues and busts, sculptors make works in which the figures are attached to a background of marble or other material. These are called works in relief, or *relievo*, as the Italians call it. In high relief the figures are only attached to the background here and there, and are in places quite free from it; in half relief, the figures project half-way from the background; and in low relief the figures stand out but a little way—less than half. The word for this in French is bas-relief (pronounced ba-relief), and is perhaps more generally used than the English bass-relief.

Bad Writers.

A great many stories are told about the mistakes of printers, and there are some ridiculous ones that may happen by the use of a wrong letter, but the printers would not make so many blunders if those who wrote for them wrote more plainly. Many noted writers have been celebrated for their horrid hand. The bad writing of the eminent lawyer, Rufus Choate, has often been mentioned as the worst possible; some one said that the word "what" as he wrote it, "looked like a small gridiron struck by lightning." One of the widely read English journals not long ago had an article on "Wretched Writers," which was mainly devoted to showing the mistakes made by Horace Greeley, as if there were not abundant examples of bad writing in England. It is true that Mr. Greeley would never have succeeded as a writing-master. We have several pieces of his writing which are not so difficult to make out when one gets the hang of it and knows that he made *s*, *a* and *r* all alike, as he did *b*, *p* and *h*. This English journal gives an instance of his bad writing that we had not seen before. Mr. Greeley was invited to attend a press meeting in a Western state, and sent a letter declining to come. Those who invited him studied over his answer, and this is what they made out of it: "I have hominy, carrots and railroad ties more than I could move with eight steers. If eels are blighted, dig them early. Any insinuation that brick ovens are dangerous to hams gives me the horrors." What he did write was: "I find so many cares and duties pressing on me, that, with the weight of years, I feel obliged to decline any invitation that takes me over a day's journey from home."

It does not seem possible for every one to learn to write an elegant hand, but it is possible for every boy and girl to write a plain hand that can be read without difficulty. The most troublesome letters that come to this office are those of persons who use flourishes, and though the written page as a whole presents a fine appearance, yet it is more difficult to read than the poorest cramped school-boy hand. It very often happens that we can read every part of a letter but the most important—the signature. While you are young, get in the way of writing your name so plainly that there can be no doubt of a single letter in it. It may save yourself and others much trouble in after life.

Aunt Sue's Puzzle-Box.

ANAGRAMS.

1. I undid vial.
2. Let M. audit.
3. O hem her rag.
4. She pops the corn.
5. Train my mole.
6. Pet cider.
7. Adored love.
8. Is Peter a Pict?
9. Crimp fect.
10. Clide Inn.

CONCEALED SQUARE-WORD.

I saw him stab and kill a buffalo, entirely for sport, and did "not enter his name on my list of friends;" indeed, I never wish to see him again. ELKCIM.

PI.

Noe tenleg drow hatt I amy kapes,
Neo dink dan volgin edde,
Amy—ought a riflet ropo adn kewa—
Overp ikle a nity edes;
Dan how nac letl thaw dogo yam gnirps
Morf chus a revy tillet night? J. C. C.

NUMERICAL ENIGMA.

I am composed of eleven letters.
My 1, 4, 2, 5 is a planet.
My 6, 11, 10, 9 is pretty poor when it blows nobody any good!
My 8, 7, 1 is an article of food.
My 10, 11, 3, 9 is a sort of avenue.
My whole is an American river. H. S. B.

CROSS-WORD.

My first is in father but not in son.
My next is in bread but not in bun.
My third is in purchase but not in buy.
My fourth is in pudding but not in pie.
My fifth is in strike but not in pound.
My sixth is in oval but not in round.
My seventh is in vigor but not in health.
My eighth is in money but not in wealth.
Select the right letter from every word,
And you'll find a name you have often heard.
H. L. MORTON.

DIAMOND PUZZLE.

1. Part of a day.
2. A vehicle.
3. To mark.
4. A geometrical figure.
5. A disease.
6. A girl's name.
7. Part of the hand.

PATCHWORK.

Take 1/2 of a hand, 1/4 of a fragment, 1/5 of a third, 1/2 of a lamb, and make an amusing puzzle of the whole.

CHARADE.

My first, a kind of seed
That in my whole's contained;
My next is sharp indeed,
Its wound with blood's soon stained.
My whole is ripe in fall,
Its taste delicious quite,
In shape 'tis like a ball,
With pulp both soft and white. HENRY.

ANSWERS TO PUZZLES IN THE MAY NUMBER.

ANAGRAMS.—1. Furtherance. 2. Kalsomine. 3. Misogamist. 4. Conventional. 5. Centuries. 6. Vocabulary. 7. Implification. 8. Beleaguers. 9. Elucidation. 10. Throughout.

PI.—The snow-drifts, which have lain so long
Haunting the hidden rocks,
Like guilty ghosts have slipped away,
Unseen, into the brooks.

SYNCOPATION.—Slate, late, ate, at, t (tea).

CROSS-WORDS.—1. Hannah. 2. Catalogue.

CONCEALED GEOGRAPHICAL NAMES.—1. Asia. 2. Alaska. 3. Parana. 4. San Francisco. 5. Ohio.

SQUARE-WORDS.—

LOVE	HATE
OVAL	AJAR
VATS	TAPS
ELSE	ERST

GULLIVER BEFORE THE CITIZENS OF BROBDIGNAG.

ALPHABETICAL ARITHMETIC.—

143)628397(4425 (*Key:* Wicked boys.)

ILLUSTRATED DOUBLE ACROSTIC.—Water-melon.

W- igwa -M
A- ntelop -E
T- owe -L
E-ighty-tw-O
R- ai -N

AUNT SUE'S NOTICES TO CORRESPONDENTS.

HETTIE M. G.—I am glad you "all enjoy the puzzles so much." I can not do less than thank the dear children when they take the trouble to write and send me puzzles, although many of them are popped into the scrap-basket as altogether too poor for use.

J. H. W.—It is scarcely worth while to "PI" well-known proverbs or verses, as one or two words will often give a key to the whole, and "spoil the fun."

BESSIE BENNETT writes to me on the 9th of May, and says: "You just ought to be in the country now; everything is as pretty as can be."—I am just going, Bessie. If there be one thing I love above another it is to see the baby leaves rocked in their bud cradles by the May zephyrs to the sweet music of happy birds. Bessie squares LOVE five times and HATE ten times; she seems to find it easier to "get square" with hate than with love.

MINNIE, HESTER, AND ETTIE.—Thanks. I have a superabundance of numerical enigmas, but, under the circumstances, yours shall be prepared for publication.

Thanks, for letters, puzzles, etc., to M. Cator, Isaiah S. R., M. C. Slear, Mattie J., W. J. K., D. H. L., Ruthie A. B., Frank L. H., and Nellie Van.

All contributions for the PUZZLE-BOX should be addressed to AUNT SUE, P. O. Box 111, Brooklyn, N. Y.

Gulliver in Brobdignag.

Perhaps the first questions you will ask will be, "Where is Brobdignag, and who was Gulliver?"—You will not be likely to find Brobdignag on any map or in any gazetteer, for the place, as well as Gulliver, was the work of a gentleman who had a very lively fancy, who described both as if they were real. Over a hundred years ago there appeared a book called Gulliver's Travels, by one Jonathan Swift, better known as Dean Swift, and it was a most interesting story; fifty years ago or less it was printed with pictures as a children's book, as the story was so well told that children could get amusement from it as they do from Robinson Crusoe. But it was not intended as a child's book; the author wrote it to ridicule some of the people and the fashions of his time. The story says that Gulliver was shipwrecked on a strange land called Liliput, where the people were only six inches high; and it gives a great many amusing adventures that happened to him among these little people. He was first taken prisoner by them, having laid down to sleep near one of their cities. He found upon waking that he could not rise; the little fellows had made him fast by the hairs of his head, as well as by many cords over his limbs. They thus took him captive, and he lived for a while among these little people, doing many strange things. Although Liliput was a fanciful name, it has become fixed in our language, and we call anything that is small "liliputian."

After a while Gulliver escaped from Liliput and reached home, but soon after he went on another voyage and got left by his ship in the land of the Brobdignagians, who were a race of giants, as much larger than he was as he was larger than the Liliputians, and his adventures here were quite as strange and as laughable as those among the pigmies. He was taken possession of by a farmer, who put Gulliver in the care of his daughter, a bouncing lass, who had the beautiful name of Glumdalclitch. You can imagine the size she was said to be by the story that she had a box made in which to carry Gulliver about, like a pet bird. Everything in Brobdignag, according to this history, was as large in proportion as the people, or, to be exact, trees, birds, hailstones, and all other natural objects were eighteen hundred times larger than in England. After a while he went to court and lived with the king and queen. One of the royal attendants had a spite against Gulliver, and as he was walking in an orchard shook the trees, and the apples, each nearly as large as a barrel, came near killing him. He had wondrous battles with the linnets and other small birds of the country, as well as with a frog. For exercise he used to row in a boat which the princess hung up in her closet to dry after he had used it. But perhaps some of you may some day come across this quaint old book, which though written to ridicule the court of England, and princes and public men now long dead, is very bright and amusing for the way in which the story is told. Some very beautiful editions of this famous book have been published, with fine illustrations. The picture here given is from one of these volumes, and is by Morten. The farmer who first had Gulliver used to take him about and exhibit him, just as Barnum in later years did with Tom Thumb. The picture shows one of these exhibitions before the wise people and dignitaries of Brobdignag. His mistress, Glumdalclitch, is showing off her pet, who is evidently astonishing the natives. A portion of the box in which the lady carried Gulliver around is seen at one side, and she holds in her hand one of the straws of that remarkable country, which, according to Gulliver, served him for a lance or spear. If the persons who are witnessing his exhibition are fair specimens of the citizens of Brobdignag, we do not wonder that he was glad to leave the country, notwithstanding that he was a favorite with the king and the royal family.

Life Insurance.

MODERN science and civilization have achieved no prouder triumph than in the discovery and practical application of the principle of life insurance. As a discovery, it ranks with the most wonderful inventions of the century; as a beneficent institution, it outranks and overshadows every other that has been devised by the wit of man. The unwritten record of its benefactions are one grand epic, telling of the triumphs of human love over sorrow and death. The visible creations and monuments of its power are the strongest, purest, and most enduring financial institutions of the age.

Among these, conspicuous alike for its age, its stability, and its liberality, stands the United States Life Insurance Company of this city. Organized in 1850, when life insurance was an experiment in America, and little more than an experiment anywhere, this company comes forth from the trials and vicissitudes of nearly a quarter of a century with $4,253,866.48 of assets, a surplus as to policy-holders of $915,443.46 and a record without spot or blemish.

Twenty-five years is a long time in the history of American life underwriting. In that time, what financial changes, what social progress, what political revolutions have transpired. Through what storms and perils has every great moneyed corporation of the country passed—either to oblivion, or to a secure place in the confidence of men.

The founders of the United States Life Insurance Company were among the pioneers of life insurance in this country. Time and space are wanting with us to tell the story of their early struggles, of their patience, and a faith — a patience that "worked" rich experience, and a faith gloriously illustrated by works.

They contended with difficulties that to less sturdy souls would have been insurmountable. They explored untried regions, and wrought with unknown material. They builded with the trowel in one hand and the sword in the other, but *they builded better than they knew.* They laid the foundations, and sprung the arches, and established the economy of a building that has outlasted their lives, and promises to outlast the memory of their names—a building beneath whose staunch rooftree more than 10,000 families are sheltered and secured.

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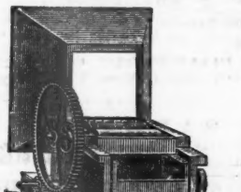

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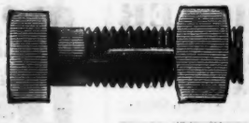

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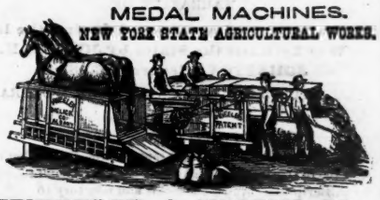

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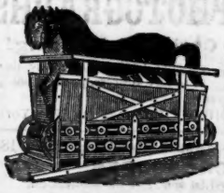

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The Mennonites.—These people are now arriving at their new Western homes. A few weeks ago, a body of three hundred and fifty arrived in New York, bringing a common fund of $60,000, and immediately started for their destination, in Nebraska. The industrious, frugal habits of these people, with their strong religious character, will make them as sturdy, persevering, and finally as successful a body of citizens as could be wished for.

Exportation of Live Cattle.—A recent experiment in shipping live cattle from New York to England failed, not for want of profit, but because of loss of the cattle by death on the voyage. This adverse result seems to have been due to bad management, for two successful voyages from the River Platte, in South America, have been made to England, with live cattle and horses. The trips occupied twenty-four days, and nearly one hundred head were taken at each trip, arriving in London in such fine condition, that they sold immediately to farmers, for feeders, at a profit of one hundred per cent above cost.

"Loss of Cud."—"F. P.," Anderson Co., Texas. This is an ambiguous term. It may mean dropping of the cud from the mouth, during rumination, or a suspension of rumination. Both may occur from the same cause, viz., indigestion, or eating injurious or poisonous plants. If this is the cause, the stomach and bowels should be cleared by a strong purgative, such as twelve ounces of Epsom salts, with one ounce of ground ginger along with it. But the latter may occur from the animal having swallowed something, which has injured the paunch, such as a thorn, a nail, piece of glass, or other rough, sharp substance. The symptoms which might be looked for in this case, would be a rapid wasting and weakness, a staring coat, and a dull-colored skin, with much loose scurf upon it, irregular appetite and bowels, with discharge of gas from the throat, and accumulations of it in the paunch. Nothing can be done in this case but to trust to chances, and a natural recovery, leaving the animal at rest, to facilitate a cure of the injured parts, or the expulsion of the intruding substance, if that is possible.

Packing Butter.—"S. J. T.," Susquehanna Co., Pa. It would hardly be safe to pack butter in glass, for shipment to a distance. It is hopeless for those distant from the city markets, to compete for the fancy butter trade, in which appearance goes for a good deal. But if the butter is extra good, and is packed in new tubs or pails, it will always sell at the top of the market, wherever it may come from, as soon as it gets known.

Twins.—"C. R. D.," Brookline, Mass. It is only occasionally that a twin heifer or bull fails to breed, and the fact that this happens, although very seldom, should not be considered as evidence of the infertility of these animals, until it is proved. We would not, therefore, turn a promising heifer calf into veal, because she was a twin with a bull calf. The term, "free marten," sometimes used to designate such an animal, is a meaningless term, and the idea that it is necessarily a hermaphrodite, or sexless animal, is an absurdity. A pair of twin Shorthorn heifers recently sold for $11,000, and from a pair of twin heifers a family of excellent Shorthorns has been raised in England.

Sand for a Cranberry Marsh.—"T. P.," Huron Co., Mich. The purpose for which sand is used to cover the surface of a cranberry marsh, is to prevent the growth of weeds until the cranberry-plants can get possession of the surface. Loam would not answer this purpose, and it would be worse than useless, because it would foster weeds. Only clean sand from a river bed or a bank should be used, and should be so free from clay as not to cohere when pressed in the hand.

Forest Fires.—"W. W. S.," Green Co., Wis. The danger from fire to fences and farms, may be greatly avoided by keeping the fence rows free from weeds and in grass. The grass should be mown every year for hay. A strip outside of the fence, of at least six feet wide, should be also kept in grass, and when fires are running, and danger is apprehended, a few furrows should be run with a plow outside of this grass strip. The too common practice of building the fence in the midst of the rubbish of the clearing, or upon the very verge of the uncleared ground, is a dangerous one, and should be avoided.

Blood Diseases in Stock.—Years ago, deadly epidemics, which carried off thousands of the inhabitants of large cities, and which frequently penetrated into rural districts, with disastrous effects, were common. These were considered as mysterious visitations of Providence, and calamities which were unavoidable. But their true nature came to be understood in time, and it was found that these fearful diseases were inevitable results of a trangression of natural laws, and a want of simple sanitary precautions. Exactly the same occurs now, every season, with our stock. Cholera, amongst hogs, is a typhoid disease, originating from a poisoned condition of the blood; and while it is preventable, it is entirely preventible, by the use of common precautions; so the Texan, or Spanish fever, in cattle, black-leg in young stock, rot in sheep, and all the various so-called murrains, which devastate the herd, as well as spinal meningitis, and the epizootic amongst horses, are preventible; and if the same care is taken amongst stock, as amongst ourselves, to feed well and judiciously, to use only pure water, to ventilate and keep clean the stables, and to watch the first approach of disease, little would be heard of these destructive diseases.

Bankrupt Farmers.—It rarely happens that a farmer, who minds his business, and refrains from speculations, can become a bankrupt, and then only through some unfortunate neglect, mistakes, or accidents, that in general are avoidable. But at the present time, some of those farmers who have gone into tobacco growing, and have stored their crops for higher prices, for two or three years past, and have borrowed money to carry over their stock of leaf, are in the disagreeable position of bankrupts. Their property will now be sacrificed by their creditors. This is surely a lesson to be heeded. We have taken pains to advise our readers to observe caution, with regard to this tempting crop, both early this season and last, and our caution has been widely copied by other papers. Farmers can not be too careful about growing special crops, or holding for a rise, which may never come.

Death among Horticulturists.—By some accident, we omitted at the proper time, to notice the decease of two persons well known to the horticultural public—Robert Morris Copeland and Mark Miller. Mr. Copeland was an occasional contributor to the *Agriculturist*, and was best known by his work, entitled "Country Life," which is a very full compendium of rural affairs. He was, by profession, a landscape gardener, in which, especially in New England, he was highly appreciated. He died at Cambridge, Mass., April 10th last.....Mr. Miller, whom we met at the meeting of the American Pomological Society at Boston, in September last, in a very feeble condition, never recovered from the illness by which he was then nearly prostrated. He was highly esteemed at the West, as a sterling pomologist, and was for many years engaged in promoting the interests of fruit growers. He established the "Wisconsin Farmer," and, after removing to Iowa, the "Western Pomologist," which journal afterwards became the "Pomologist and Gardener," and was ultimately united with the "Horticulturist" of New York. After the consolidation of the two journals, Mr. Miller remained editorially associated with the Horticulturist.

Curtailing Crops.—"Subscriber." The idea that farmers can ever restrict production so as to control the prices of their crops, may as well be abandoned at once as impracticable. Farmers can not even raise exactly what they want each year, because the ground must be cultivated, or it is worse than useless, and the necessity for raising precisely such and such crops is absolute. A farm is different from a stone-quarry or a mill, which may lie idle without injury. A farm must go on, and it is only seldom that a farmer has a choice of what he may raise. But he may very readily so provide that his crops, instead of coming upon the market in a crude state, should be fed to stock, and thus be turned into a shape in which they might increase, as by compound interest, or may be made more salable.

Cheat or Chess Once More.—"Farmer," Stamford, Ky., writes: "We want an expression from you in reference to the production of 'cheat.' (1) Is it a species of grass? (2) or what causes it to spring up in wheat fields or meadows? (3) If a stalk of wheat is bitten off below the point, cheat will branch out from the root. (4) In places in wheat fields where water stands any length of time after a rain, cheat is found in abundance. (5)"—(1) In former years, we have discussed this subject in full, but are ready to renew it when assertions are accompanied by proofs. (2) Yes. (3) We have no reason to believe that cheat, or chess, is produced in any manner different from other plants—*i. e.*, from seeds. (4) This is a statement that has been frequently made; let us have the specimens. We will willingly pay the expenses on a box containing plants, known and proven to be wheat which bear cheat or chess. (5.) In wet places, wheat or its seed is killed, while the cheat survives. Our correspondent should read the report of a committee of the New York State Agricultural Society, published several years ago, and he will see that all the various methods to cause wheat to turn to chess were thoroughly tested. Ten or more years ago, Mr Judd offered a large premium for a specimen which should be pronounced by competent botanists to be part wheat and part chess. The offer remained open for several years, but no specimens were presented.

Diarrhœa in a Colt.—A "Subscriber," Lancaster Co., Pa. In case a sucking colt suffers from diarrhœa, we would give the mare cold rice water for drink, made by boiling four ounces of rice in a gallon of water. This should be mixed, when cold, with her usual drink. One ounce of prepared chalk and one of salt should also be given in each feed for a few days, until the diarrhœa in the colt is stopped. It is probably due to acidity of the mother's milk, which may be caused by overwork or indigestion, or from indigestion in the colt. Some chalk should also be placed where the colt can lick it. The above remedy is also effective when young calves are similarly troubled.

"Esquire."—"E. N. N." is in trouble, because we and others address him as "Esquire," and thinks it no more proper than to call him "Rev.," "Doct.," etc., and asks our views on it. We have no views on the subject whatever, but have found that the world runs much easier if we fall in with its harmless usages, than to try to reform them. It is very absurd to say to a man, "How do you do?" when we do not care a snap how he does. Yet it is a part of the grease that keeps our social machinery in order.

Foreign Imports and Native Exports.—The Bureau of Statistics furnish the following very gratifying figures, showing the exports and imports of merchandise for seven months, ending January, 1874, as compared with those for the same period in 1873, viz:

Periods.	*Imports.*	*Dom'c exp'ts. Specie val.*	*Foreign exports.*
7 months ended Jan. 31, 1873..	379,190,969	329,306,257	15,970,897
7 months ended Jan. 31, 1874..	329,696,105	360,837,772	12,857,469

This shows a remarkable change in the course of trade, being a balance in our favor of over $44,000,000 the present year, in place of a balance against us of nearly $34,000,000 last year, or a difference altogether of over $78,000,000.

Rape and Vetches, or Tares.—"R. D. W.," Washington, Pa. Rape (*Brassica napus*) is a plant nearly allied to the turnip, but has not an edible root. It is grown for its stalk and leaves, which make a fine fall, or winter, pasture for sheep. The crop may be sown in July, or August, upon an oat stubble, broadcast, at the rate of a peck of seed per acre, and may be pastured from November until covered too deeply with snow. Sheep will gather a good deal of it by pawing away the snow, if not too deep, through the winter, and the green feed and the exercise are excellent for them. The refuse of the crop may be plowed under in the spring. Tares (*Vicia sativa*) are a leguminous plant, not unlike peas. They may be sown in spring, or fall, (there being two varieties, as in wheat), and cut for green fodder, or for soiling during the summer. 2½ to 3 bushels of seed per acre are generally sown. Either of these requires rich soil for successful culture. Tares are excellent green fodder for horses.

Disease of the Lungs.—"J. McD.," Perry Co., Ohio. Amongst highly bred animals a disease known as emphysema, or the presence of air in the cellular tissue of the lungs, is more frequent than in other stock. Hereditary taint and high feeding are generally the causes. Difficult respiration and discharge, mixed with blood from the nostrils, generally accompany the disease, as do also an irregular condition of the bowels, falling off in flesh, staring coat, and poor appetite. The presence of the air in the tissue of the lungs enlarges their bulk and destroys their elasticity, and thus interferes with respiration and the circulation of the blood. There is no remedy, and the only means of palliation is to feed sparingly, but frequently, with the most nutritious food, to keep the animal still and in the most comfortable condition, to card daily with the wire card, which will assist circulation, and to give tonics, such as half a dram of sulphate of copper, with a tea-spoonful of ginger daily, in the feed.

The Value of Chandler's Scraps.—"J. H. B.," Westchester, Pa. The refuse of tallow or lard renderers is worth more for feed than for manure. The fat it contains is valuable when fed, but useless as a fertilizer. It is better, therefore, to feed the scraps, because then nearly all the nitrogen they contain will be found in the manure. These scraps are worth about 1¾ cent a pound.

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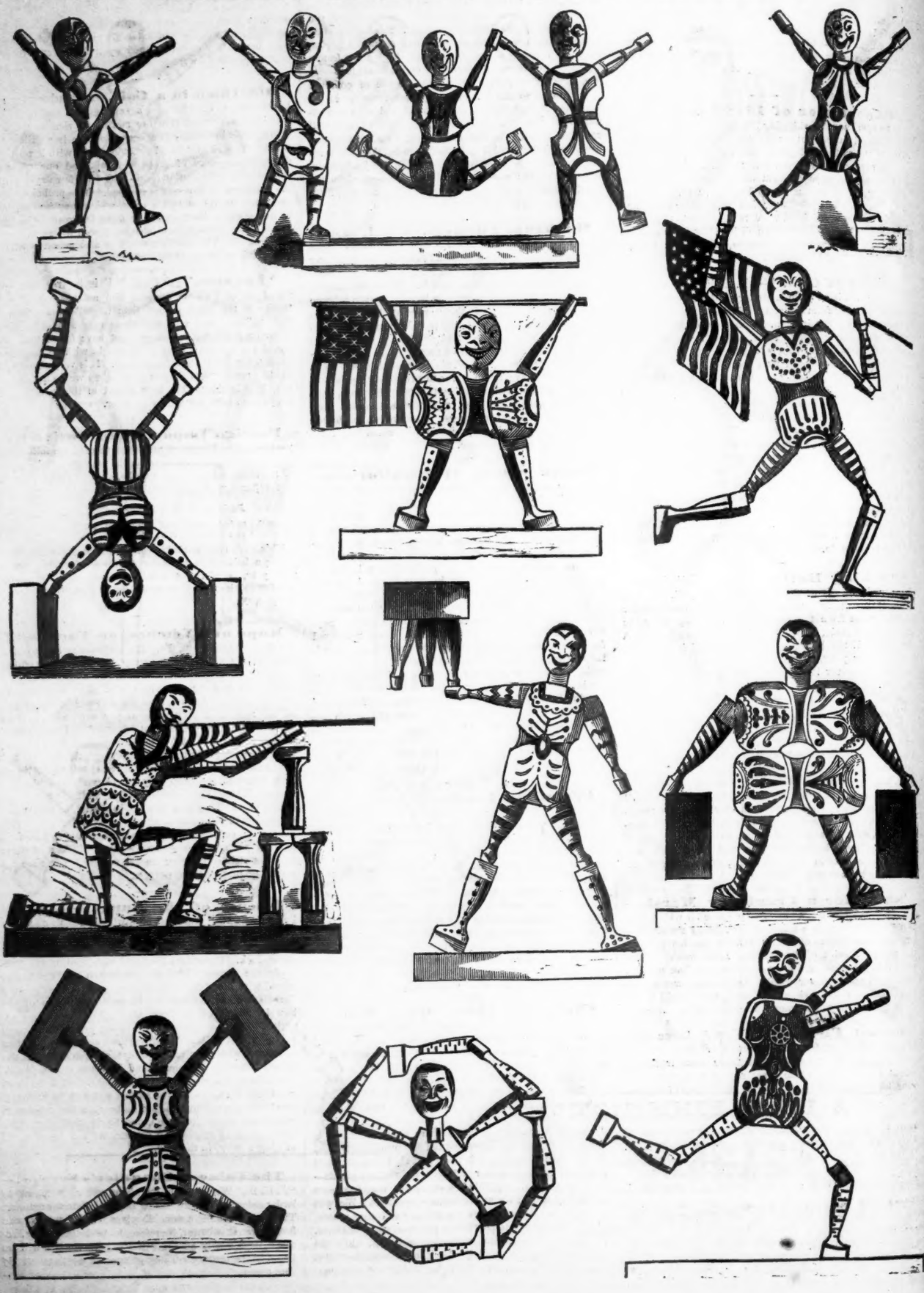

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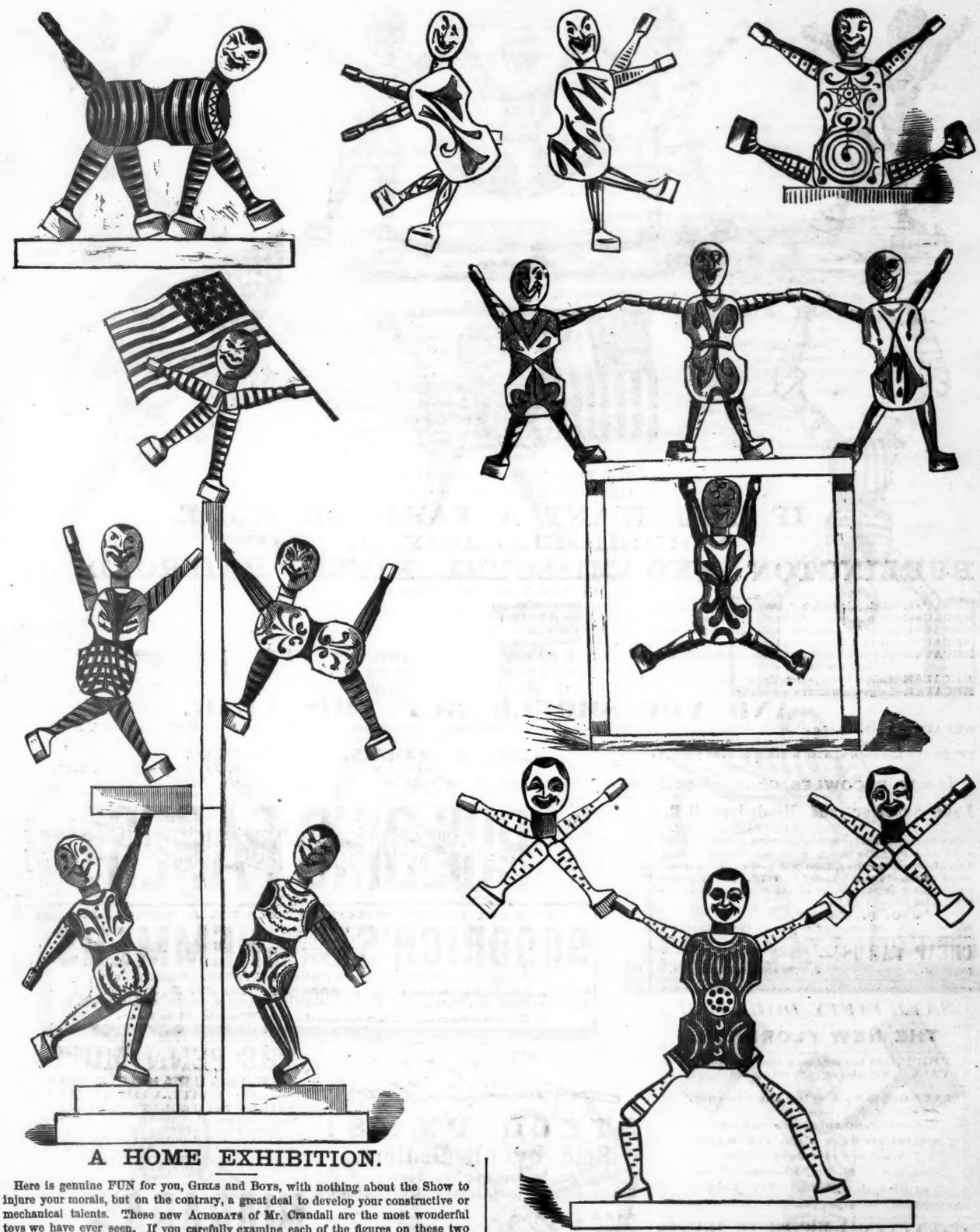

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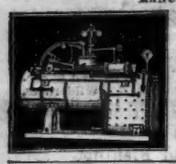

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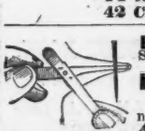

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